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THE AUTOMOBILE

WEEKLY — NEW YORK — SATURDAY, NOVEMBER 7, 1903 — CHICAGO — 10 CENTS

Last Star Event of the Racing Season.

LAST Saturday's racing at the Brighton Beach track, under the auspices of the Long Island Automobile Club, brought nto prominence a new star on the automobile racing firmament, and, at the same time, checked the career of another driver whose skill and daring had been demonstrated in the motorcycle field, but who drove an automobile in a public race for the first time on this occasion.

M. G. Bernin, a young Frenchman who is an almost perfect double of Laurent Grosso, the erratic driver of O. W. Bright's fast Mercedes, was the star of the meet. Driving W. G. Brokaw's Renault he scored three decisive victories, though it was his first racing experience. Bernin showed unusual skill and judgment, and his driving placed him in the same class with Barney Oldfield, Henri Page and Jules Sincholle.

Albert Champion, who also made his debut as an automobile driver at this meet, operating the Packard "Gray Wolf," though he only succeeded in taking third

The "Gray Wolf" under Popular Inspection.
The Cadillac in the Brighton Handicap.
One of the Franklin Cars in the 5-Mile Race
F. A. La Roche in the 40-HP. Darracq.

SCENES FROM THE BRIGHTON BEACH RACE MEET, OCTOBER 31.

place, showed himself in his first race to be a clever and daring driver. Given a heavier car he certainly would have starred in his first automobile race, as he was unafraid and sent the rakish little machine at the best speed its light weight would warrant and held the turns perfectly. Harry Cunningham, the regular driver of the same car, did not drive it nearly so fast in the race in which he participated, claiming that it was unsafe to drive the car faster on the rough track.

After taking third in the ten-mile open for cars under 1,800 pounds, and second in the five mile event for the Manufacturers' Challenge Cup, Champion crashed through the fence into the infield after going a trifle more than a mile in the unlimited pursuit race. The car was wrecked, but Champion remained in it. When spectators reached the luckless driver he lay unconscious over the steering wheel with his right hip and thigh covered with blood. He soon recovered after being laid out on the turf, however, and lay silent, his oldtime gritty self, while physicians stanched the flow of blood and tied up the injured leg in emergency splints. Champion was taken to the Kings County Hospital, and the surgeons pronounced it a bad case of compound fracture of the thigh. The crushed bone had broken through the flesh.

Champion has been prominent in the bicycle racing world for several years past as a pace follower at the middle distance game. Of late he has been riding motorcycles, and he had the distinction of being the first man to drive a motorcycle a mile under the minute on a circular track. His world's record of 55 seconds for the mile, made on the Charles River bicycle track, near Boston, on last Labor Day, is the lowest time ever made on a circular track by any kind of vehicle. Champion came to this country from France in 1899, and has managed to keep in the lime light ever since. He has always been admired for his indomitable pluck. It is said of him that once when spectators came running to him after a frightful fall on a bicycle track while going well under a 1:30 clip he arose to his feet, gave himself a shake and exclaimed to the anxious inquirers: "What you think—I know not how to fall, hey?"

The meet, which was the second track event directed by the club, was a success in most respects, though no records were broken and the attendance was not large. Over 200 cars were parked in the paddock, and it was preëminently an automobilists' meet. Nearly every one of the 3,500 spectators could pride himself in his knowledge of automobiles. It was a critical crowd, too, and well posted on the ability of the different cars. Programs were but seldom referred to, the crowd knew the cars and their drivers; the numbers were more of a convenience than a necessity after the first two races.

The first event, five miles, for stock cars under 1,200 pounds, class B, was started shortly after 1 o'clock. Lloyd O. Gitchell, in Col. W. P. Harlow's 16-horsepower Darracq; Joseph Tracy, in E. B. Gallaher's 16-horsepower Georges Richard-Brasier; O. A. Reed, in W. G. Brokaw's 8-horsepower De Dion, and F. A. La Roche, in his 12-horsepower Darracq, lined up for the start.

Tracy followed up the triumphs he achieved with this car at the last meet at the Empire City track. He went to the front right from the tape and easily ran away with the race, winning in 6:41 1-5. La Roche was second and Gitchell third. Tracy was disqualified, however, because his car was stripped for racing, having the bonnet off and the motor and gears exposed.

The ten-mile open for cars under 1,800 pounds brought out Albert Champion in the "Gray Wolf," Edward Frederick in B. M. Shanley, Jr's., Decauville; M. G. Bernin in W. G. Brokaw's Renault, and F. A. La Roche in his 40-horsepower Darracq. Bernin and Champion were both new to the automobile racing game, and as they both drove fast cars it was expected that they would take big chances

ASSEMBLAGE OF SPECTATORS IN THEIR AUTOMOBILES NUMBERING ABOUT 300 DRAWN UP BETWEEN

to win distinction in their first race. Bernin's car, backed up by skillful and and nervy driving, proved much the fastest in the race, and he won handily in 11:23 2-5 La Roche, who was second, was timed in 11:35 1-5, and Champion ran third in 12:13 4-5.

The third event, five miles for gentlemen operators, brought out a good field, there being four trial heats, cars of same make and approximate horsepower being grouped. The final heat was open to the winners of each heat, and cars were handicapped upon the basis of their trial heat performance.

In the first heat John W. Howard (Howard), Louis Nunemann (Darracq), M. G. Bernin (Renault), and F. A. La Roche (Darracq), were the starters.

The cars got away on very even terms, but Nunemann dropped back before reaching the eighth pole. The Renault and the Darracq forged to the front and the first mile was covered in 1:12 3-5, with the Renault having a slight advantage. La Roche was a close second, with Howard back about a hundred yards. Bernin continued to gain ground gradually, and Howard dropped out in his third mile. The Renault continued its even running and it caught the smaller Darracq just after passing the tape in the fourth mile. Bernin held his lead and won the heat in 5:38 1-5. La Roche's time was 5:49 2-5.

In the second heat, Charles A. Carlson (Winton) and E. B. Gallaher (Georges Richard-Brasier) were the starters.

Gallaher took the lead right from the start and it looked like a walk-away. On the backstretch, however, he slowed down and the cars ran down the stretch very close together. It looked like jockeying on the part of Gallaher. He maintained his lead over the Winton, but at times demonstrated his ability to open up a gap. In the fifth mile Gallaher allowed his opponent to draw up alongside and for a few brief seconds Carlson got a whiff of pure air. In the stretch, however, Gallaher pulled away and won by a margin of over fifty yards. Time, 8:46 2-5

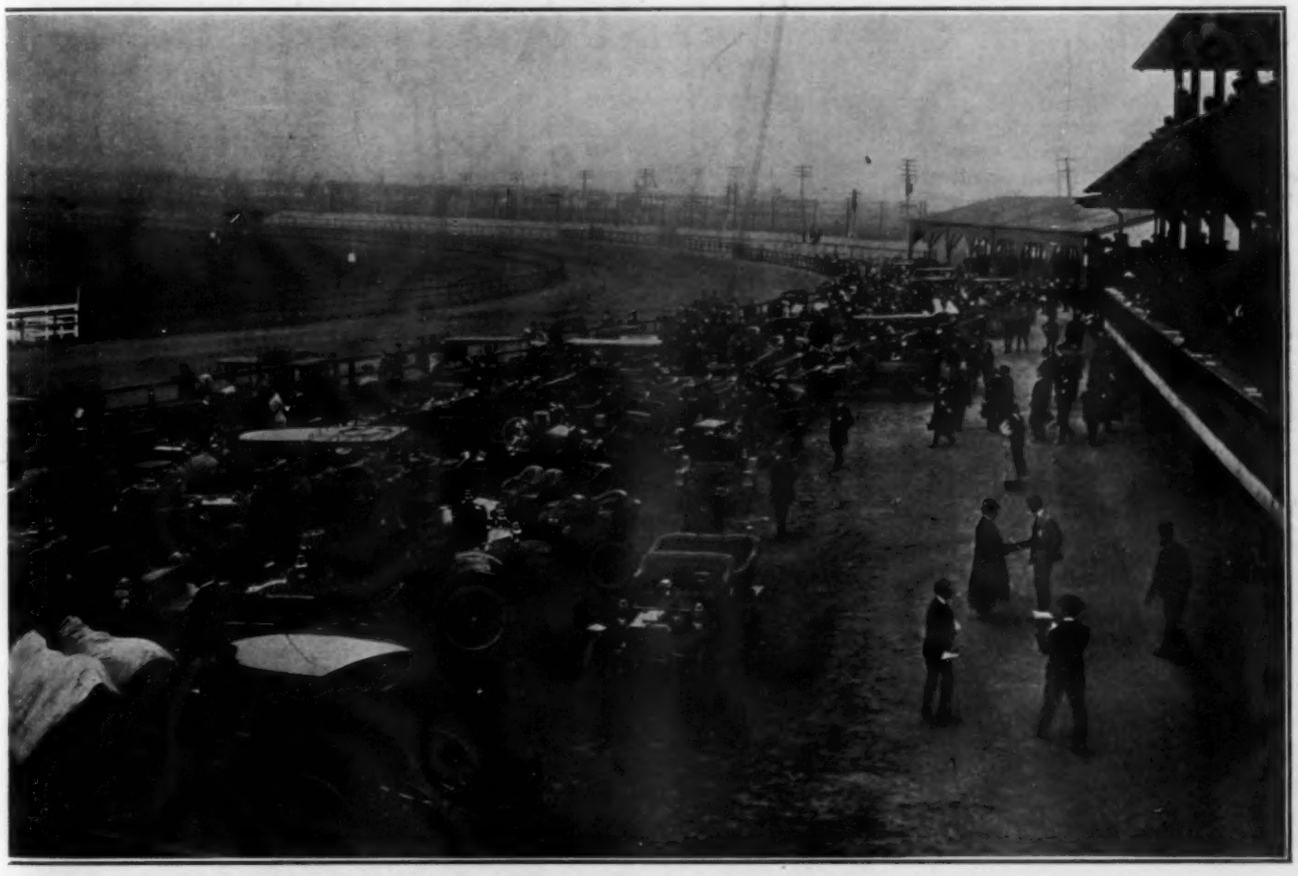
There being but one starter for the third heat of the five-mile race for gentlemen operators, that driver, Victor Kranich (Darracq) was sent a mile to qualify for the final. He was timed in 1:27 2-5. After crossing the tape Kranich cut out his power, slapped on the brake and scooted across the track from the pole to the paddock gate with a sharp twist, throwing up a cloud of dust and causing a small sensation. Many expected to see the recklessly driven car turn turtle.

The fourth heat brought out four Franklins, the drivers being R. C. Seymour, R. M. Owen, J. C. Stewart, and C. H. Hayden. Hayden took the lead at the start and gradually drew away from the bunch, winning in 9:01 2-5, with a lead of a half mile on Seymour. Owen and Stewart rode what was apparently a dead heat for last place, and won the only applause of the race. Owen was awarded the decision.

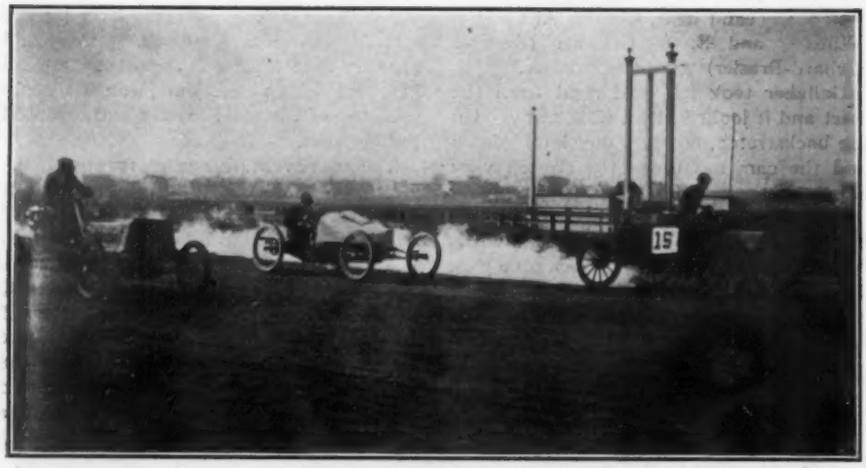
The next event, five miles, for the Manufacturers' Challenge Cup, brought out Albert Champion in the "Gray Wolf," John W. Howard in his steam racer and F. A. La Roche in a 40-horsepower Darracq.

La Roche took the lead from the start, closely pursued by Champion. Howard was soon outdistanced, and at the end of the third mile he was a half-mile to the bad and dropped out. The Darracq and the Packard continued on very even terms. In the fourth mile Champion drew up very close to La Roche, and it was a race right to the finish. La Roche won in 6:03 4-5. Champion's time was 6:07 3-5.

The fifteen-mile free-for-all brought out Harry Cunningham in the "Gray Wolf," M. G. Bernin in W. G. Brokaw's Renault, and Louis Nunemann in F. A. La Roche's 40-horsepower Darracq. Bernin took the lead and the field spread in the first half-mile, the Darracq being second and the "Gray Wolf" third. At four miles Cunningham was a half-mile to the bad, while the Darracq led him by a quarter. Bernin gained nerve as the race progressed and drove miles very near the minute. Cunningham was passed in the stretch in the



THE JUDGES' STAND AND THE GRAND STAND AT THE BRIGHTON BEACH RACE TRACK, OCTOBER 31.



DARRACQ AND PACKARD CARS AND HOWARD STEAMER STARTING IN 5-MILE EVENT FOR "GENTLEMEN DRIVERS."

eighth mile. The Darracq passed the "Wolf" in the fourteenth mile and Cunningham dropped out. Bernin passed the Darracq in the backstretch of the fifteenth mile and won the race in 16:18 1-5. Nunemann's time was 17:30.

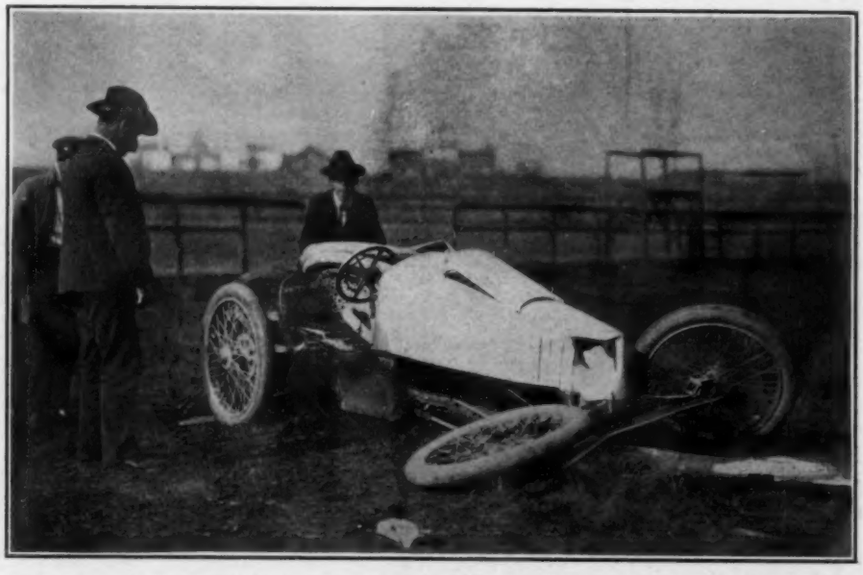
In the three-mile match between George C. Cannon and John W. Howard, in their special steam racers, Howard was clearly outclassed and practically gave up the contest in the third mile. Cannon's time was 3:46 3-5. Howard's time was 4:33 3-5.

In the final heat of the five-mile race for gentlemen operators F. A. La Roche (Darracq) was on scratch, Victor Kranich (Darracq) had 56 seconds, and C. A. Hayden (Franklin) had a start of three minutes and twenty seconds. La Roche caught Kranich in the fourth mile and though Hayden still had a long lead and was driving very steadily the outcome seemed in favor of the flying La Roche. Such proved the case, the scratch man nipping the limit man at the tape amid great applause. Time, 6:03 2-5.

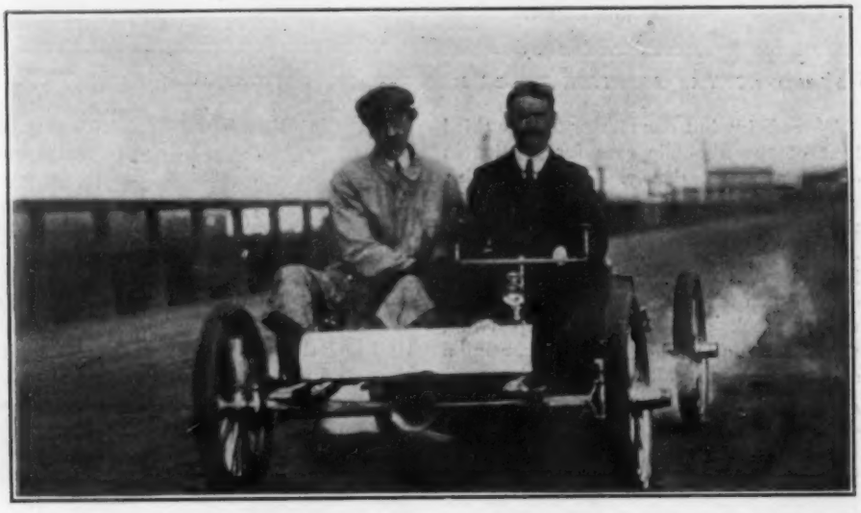
The free-for-all pursuit race, for Class A machines, brough out Albert Champion in the "Gray Wolf," M. G. Bernin in W. G. Brokaw's Renault and F. A. La Roche in the Darracq. Bernin started from the tape, La Roche from the quarter pole and Champion from the three-quarter pole.

Shortly after completing his first mile, Champion crashed through the fence at the pole and into the infield. Harry Cunningham and Jack Lavin, who had anticipated an accident at that point, because of a soft place on the track, were the first to reach the unfortunate driver. The car lay with its gray nose to the ground and its front wheels sprawled out. A piece of the fence stuck through a hole in the pointed gray bonnet. Champion lay in the car unconscious, with his right hip and thigh cruelly hurt. He was lifted out and stretched upon the turf, and physicians from among the spectators attended him while waiting for the ambulance. After a delay of some fifteen minutes. Champion was hurried away to the hospital.

Two posts of the fence had been torn out, and the middle rail board for about twenty feet was gone, but the top rail remained intact, the low car passing under it. Champion's injury was caused by collision with one of the fence posts and the lower rail as the car lurched through the fence, throwing his body violently to the right and over the edge of the car beyond the protection afforded by the motor bonnet and the steering wheel.



WRECK OF THE "GRAY WOLF" AFTER BURSTING THROUGH THE FENCE TO THE INFIELD.



GEORGE C. CANNON AND JOSEPH TRACY IN CANNON'S SPECIAL STEAM RACER.

The accident was directly due, no doubt, to the softness of the track at that point. The heavier cars could drive through the loose dirt and still retain a hold on the hard surface beneath.

The officials were slow in reaching the scene of the accident, and the two other cars in the race continued on. Bernin caught La Roche in the stretch the next time around after passing Champion's wrecked car, thereby winning the race. The flying Frenchman kept on, however, not knowing that the race was over, though spectators in hundreds were run-

ning across the track to the infield. He was flagged by the starter and immediately turned round and drove back to where the accident occurred.

After a half hour's delay on account of the regrettable ending of Champion's first day of automobile racing, the five-mile race for members of the Long Island Automobile Club was put on. The starters were Charles A. Carlson (Winton), C. H. Tangeman (F. I. A. T. car) and J. M. Mack (Winton). The race was finished in this order, Carlson winning by about 100 yards in 8:14 3-5. Tangeman, who was second, had a lead of three-eighths of a mile over Mack.

The sun had long since slipped below the western fence, and a pale little moon peeped over the roof of the grandstand when the big handicap, the last event of the day, was started. M. G. Bernin (Renault) was on scratch, F. A. La Roche (Darracq) had five seconds, Joseph Tracy (Georges Richard-Brasier) had one minute fifty seconds, Charles A. Carlson (Winton) John J. MacMulkin (Daimler), and B. M. Shanley, Jr. (Decauville) had four minutes and twenty seconds, and I. D. Plank (Cadillac) had a start of five minutes and ten seconds.

The grandstand was empty, the band no longer played, homegoing automobiles barked at the paddock gate, and the remaining spectators lined the fence as the cars whizzed in ghostly fashion around the big oval. For sixteen minutes and fifteen seconds the racers tore around the track in the deepening twilight, and when the starter's pistol announced that the race had been won, C. A. Carlson proved the victor. The winner's actual time was 15:25. F. A. La Roche was awarded second place and I. D. Plank was given third, though apparently Bernin actually won second place. No protest was made, but it was evidently a bad mistake on the part of the judges, the Renault having caught and passed the Darracq early in the race.

W. GOULD BROKAW IN HIS 30-HP. RENAULT—M. G. BERNIN AT HIS LEFT.

ALBERT CHAMPION.

Just after crossing the tape at the finish of the handicap, I. D. Plank, in slowing up preparatory to turning around to leave the track, ran into the fence at the pole and overturned. Those who ran to the scene of the smashup looked in vain for the driver of the car and for a moment it was feared he was under the wreck. Then this not proving the case, search was made on the infield, some thinking he had been thrown and hurt. Plank soon turned up, however, and said he was uninjured. He said the inside front wheel of the car struck the fence, it being so dark that he misjudged the distance.

F. A. La Roche sustained his reputation as one of the most skilful amateur drivers in America. La Roche has had wide experience in racing, and has won many prizes. The results of the decisions of the judges at this meet gave him more and better prizes than any other contestant.

Gallaher's Georges Richard-Brasier was disqualified in the race for gentlemen operators for the same reason that it was in the first race of the day. W. G. Brokaw's car was also disqualified in this race for the reason that Mr. Brokaw preferred to have Bernin, his chauffeur, be the gentleman driver for the time being. The race officials couldn't see it that way, and though Bernin drove a good race and won his heat handily, as did Gallaher also, neither was permitted to start in the final. Both declared it an injustice to keep them out of the final, as, had they been permitted to enter the deciding heat, the case would have gone to the racing board of the A. A. A. before prizes were awarded.

The officials of the meet were: Referee, S. A. Miles; judges, S. M. Butler, L. R. Adams, Lawrence Abraham; timers, Charles J. Dieges, Robert Stoll, S. D. See; umpire, Frank Eveland; handicapper, H. L. Towle; starter, A. J. Picard; clerk of the course, J. F. Borland.

LE BEAU MONDE IN THE STOCKADE.—Refreshments Served from the Hampers.

(*For Additional Illustrations and Other Racing Events, see pp. 489, 490, 491 and 492*)

A Sample Day With an Auto.

Vivid Description of the Quiet Pleasures Available for the Owner of a Motor Car, His Family and Friends.

BY HENRY S. CHAPIN.

Comment has often been made on the impression which modern journalism would give the outsider who had no opportunity to judge for himself how peaceful and quiet are the thousand and one communities that dot the hillsides and valleys of our broad and beautiful land.

The daily grist of "news" dated from large city, hustling town or tiny hamlet deals with arson, murder theft and sudden death. No bright spot appears in this seeming hell except just the circle the reader occupies, for how rarely do these events enter the horizon of the individual.

In this same manner, each novelty, as it attains notice by the press, has its sensational features spread out to columns in our great dailies, and whereas personal experience promptly convinces us that human life in these United States is not all casualties, no such broad platform of observation exists from which the public can gain a correct perspective to judge accurately of what is new and novel.

Nothing has suffered so much from this distortion of view as the automobile. First derided, it soon became more widely known and its operators were seen under shady hedges and in broiling sun tinkering unfamiliar bolts and springs, pipes and pumps. Then condemned as a new agent of Satan, it grew toward perfection and made its swift way surely and securely over our city streets and country roadways.

At this point the up-to-date journalist, suddenly realizing the presence of a new space filler, has taken it up with enthusiasm. While occasionally printing an "article" of a general character for the purpose of impressing the manufacturer with the wisdom of advertising in a paper which "backs up the industry," he has devoted his columns to a series of complete accounts, amply decorated and expanded, of every incident that can possibly be termed an "automobile accident." The public, as yet unfamiliar with the new machines by personal experience, seems convinced that danger and death attend the path of this "juggernaut." That is, provided the "Red Devil" does not refuse to run at all, leaving the unhappy riders to walk back home—They always *walk* in the newspapers.

Thus, in considering uses and pleasures of an automobile, its real capabilities must needs be outlined or the reader will probably sniff at its joys, deny its utility, and, turning aside, say, "Give *me* a horse."

Of course, all the newspaper machines have tremendous horsepower and travel at unheard-of rates of speed even on Broadway and Fifth Avenue. In fact, if Dr. Jones's light runabout which struck the curb while avoiding a frightened horse were *not* reported as a high-powered, expensive, imported machine, no doubt Dr. Jones would feel hurt and blame the paper for an injury to his reputation as a man of influence and affluence.

Nevertheless, comparatively few machines are in use that can "beat the cars," and the light, inexpensive, American-built runabout, surrey or light tonneau is at this moment doing the work and affording the pleasure that its owner demands, in a thousand, nay, ten thousand, places; proving its safety, demonstrating with each flying mile its reliability, giving a joy as of wings. What town so small it has not one going more miles without a touch of caretaking than the horse can go without a new set of shoes and many a "feed" and "rub-down."

Surely, but all too slowly, it is dawning on the public that automobiling is not all mud, grease and temptation to profanity—that hours of unalloyed pleasure are the reward of a few moments' care and inspection.

What wonderful possibilities open before the lover of outdoors, as the modern vehicle starts from his home on two minutes' notice instead of a half-hour of harnessing and grooming. How quickly is the country club, the lake side, the house of a friend or the shady grove reached without the speed that endangers! How prompt the return!

In New York, separated from its suburbs on all sides by water, much of the use of the automobile that is possible in other places is lost, but almost anywhere else the daily or occasional trip to business in town may be made exhilarating, prompt and healthgiving, without reference to timetables, nor worry as to getting a seat in a crowded car.

For those whose situation makes access to the office difficult or unpleasant by reason of bad roads, a dozen other uses present themselves, and a "sample day" may help to prove this true.

It is Sunday in a Long Island village. Bright and clear is the sun, bursting the swelling buds on bush and tree, for it is spring—and Easter Tide.

The day before, ten minutes in the barn had served to touch the wrench to bolts and nuts, giving assurance that each was in place. Tanks were full, and lubrication correct.

The bracing morning air calls for a better response than a deep breath, so, with one quick turn of the crank and a touch of the lever, we are off. Just around the block,—several blocks—a stop downtown for the morning paper and home for breakfast. No unhitching, no blanketing, only a touch of the switch cutting off the electric spark, then a glad rush to meet the babies running out to see the "teuf teuf" and papa; with glowing faces that make the sun by comparison look cold and heartless. No need for bitters—the automobile appetite that will some day be famous needs no man-made medicine. How the dainty repast disappears! How good it tastes! Now a comfortable cigar, with a bit of the news while the odor of growing things is wafted in at the window, seemingly twice as sweet because of the earlier taste of it. Money can buy no more than this.

What's that? the telephone? Hello—yes—stuck at Jamaica—missed the train! Next train at noon! All right, we will get you.

Again the quick start—the flying trip, twelve miles this time—only a half-hour—and with seats full of chatting, happy friends we swing back to the shaded lawn and hammocks, the quiet hour, the usual vocations of the day, the village church, with its field flowers and sense of Easter joy. Twenty-four miles—a day's work for a horse—and no dangerous speed at that.

Another rush through the sweet air after dinner takes our party and children, too, to Garden City, into the dim cathedral—the long "amen"—the processional—the words of hope and inspiration—the beautiful music, amid exquisite flowers banked high around the altar, and the singers.

Ten miles more are registered by the time the wheels stop at the home. They start again with those of the party who long for the breath of salt air that reaches the broad piazzas of the country club, across the marsh from the ocean, a half-dozen miles away, but with the sails of its ships clearly visible over the waving grass and winding waterways.

It's a restless lot of young folks and a half-hour of this brings the suggestion, "Let's see the surf before tea," so in they all crowd, the engine "chugs" rythmically and soon the tumbling breakers, the wide expanse of sand glowing in the gorgeous rays of the sinking sun quiet the chattering tongues and lend the last touch of peace and communion with nature.

Calmly, slowly the return trip is made through sprouting fields and springtime loveliness—the spirit quieted, the heart cleansed and at rest. Every breast too full of its own conception of the beauty of the scene to find words for its expression, but each understanding, and appreciating the other's mood, presuming not to distrust that God-given content that filled the whole of the ensuing evening with its peace and joy.

Next morning, before we ran over the machine preparatory to the trip to the city, we found the odometer had registered

fifty-two miles. Fifty-two miles, and yet only an incident in the day, but *the* incident that had made all of its other experiences possible.

No horse or man had worked, violating the commandments. There was no train of cars with its dust and noise that could cover that ground for us. Never before the time of the automobile could such a day be spent.

As we put up the machine in the club garage in Brooklyn and separated to go to our various offices in the great city we marked that day as one that each should remember while life lasted. But our home has known many such. A horse we have and use, but no laboring beast pulling at the traces that draw the heavy load can so fill the heart with the sense of lightness and freedom as the automobile with its insensate tireless engine, and not suffer for our whims.

Such is automobiling in that country which surrounds the town—a new joy—full of new possibilities. There are contests, races, parades, tours—excitement and pleasure of many kinds beside this kind to be found in the automobile, but the newspapers and the public know to-day nothing of these. Some day they will.

Harvard Graduates Start for Chicago.

BOSTON, Nov. 2.—Two Harvard men, David C. Williams, '01, and Arentiss L. Coonley, '03, left the Massachusetts Automobile Club at midnight last night on a trip to Chicago in their Winton car. They expect to cover the 1,039 miles of road in four days. The men left at midnight so as to cover the roads with which they are familiar before sunrise. Their route is through Worcester, Springfield, Pittsfield, Albany, Utica, Syracuse, Rochester, Buffalo, Erie, Cleveland, Toledo to Chicago. Their car carried three extra tires over the hood, and the tonneau is filled with luggage. Both men live in Chicago and are making the trip more for amusement than for the sake of record-breaking.

Forgot to Study His Lamp.

"This machine is no good to me and not as represented, and I want my money back," said the dissatisfied customer at a New York garage, where this story was told. The agent for the machine got into the seat and the car ran without the slightest trouble. Mystified, he returned to the customer for an explanation. "Well," said the dissatisfied one, "when I got the machine the lights burned nicely, but after three or four days they would not burn at all. I was just compelled to remain at home evenings when I might have been riding." Nonplussed for a moment, the agent finally asked: "Have you put carbide in the lamps?" Whereupon the customer asked what carbide was. "Well, of all things" ejaculated the relieved salesman, "do you think this automobile is connected with the New York gas main?"

Autos in New York's City Campaign.

Time is no less a factor in campaign work than money, for "time is money,"—and "money wins," other factors being equal. Therefore, it is not at all remarkable that the three prominent candidates for the mayor's office in Greater New York have found it expedient to adopt the automobile as a time-saving and convenient means of transportation in their campaigning for the election held this week. Although the use of the motor vehicle in campaign work is no longer novel, this is probably the first time that the leading candidates of all the parties represented on a municipal ticket have made use of the automobile.

DOUBLE-DECKER FISCHER-SYSTEM OMNIBUS SERVING "THE BEST CHIEF" IN HIS CANVASS.

In the earlier days of the automobile an attempt to use the power vehicle in campaign speechmaking was strenuously opposed by the public cab and livery stable men who had a practical monopoly of the business and naturally fought against losing the patronage of the candidates and their staff members. This resentment soon died out, however, as the cabmen realized that horses are wholly unequal to the task of covering the great distances in the short time that is made necessary by the competition in politics.

The advantage of the automobile over other means of transportation in campaign work is that it is faster than the horse and is tireless, and that it can go by the shortest route from one hall to another, carrying only its own particular party of occupants, and awaiting their pleasure at the door. For these reasons the automobile has been used practically to the exclusion of the horse this fall.

Mayor Seth Low, the Fusion party candidate, has used throughout this campaign an electric carriage which he has hired for his personal use ever since 1901, and which he used in the campaign two years ago that resulted in his accession to the office. The mayor has used it wherever he has gone each night during this campaign, covering a period of three weeks, except one night in Brooklyn and Manhattan when he used a gasoline car. He is estimated to have covered between 700 and 800 miles in it doing campaign work this fall, having traversed all of Brooklyn as well as Manhattan Borough. He has had no breakdowns or delays, for which credit is given largely to the experienced driver, Curley, who has operated the Mayor's carriage for the three years he has had it. Mr. Low has been accompanied on his nightly rides by John C. Clark and his stenographer and Mayor's sergeant. The sergeant volunteers that he "has had all the 'bubbling' he wants for a while," and, asked for a reason, says he got too much shaking up on the bad street paving. This was something of an admission from one so close to the Mayor—physically if not politically—but he hastened to add that this was in the outlying districts. The sergeant, it should be stated, is a large, heavyweight man of the amiable kind who have an antipathy to jolts.

"A good old horse and carriage for me," says the sergeant.

"But a horse can't make the long jumps necessary in campaign work," suggested the interrogator.

"O, no; in campaigning the auto's the only thing."

Asked if Mr. Low had had his photograph taken while sitting in his machine,

the sergeant said: "O, no; he wouldn't stand for that, unless somebody got it when he didn't know it." There are even some metropolitan citizens who still have an antipathy to automobiles and some votes might be lost if too much publicity were given to the extensive use made of the machine by the candidate.

The most extensive tour made in one night in automobiles was that of George B. McClellan from the Bronx down the whole length of Manhattan Island, through Brooklyn to its southern end, and then, crossing on a tug to Staten Island, through Richmond Borough in another automobile. McClellan used automobiles every night for three weeks during the campaign, frequently making long trips from meetings in the Bronx to speak at other gatherings in Brooklyn the same night, and back again to Manhattan—a total distance of twenty to thirty miles. He used no horse-drawn cabs, the distances being too great.

Controller E. M. Grout, Democratic candidate to succeed himself, used automobiles in campaign in the same way.

William S. Devery, candidate for mayor on the Independent People's Party ticket, made the most spectacular use of the automobile. He hired a huge "double-deck" stage recently completed by the Fisher Automobile Company, using the combination gasoline-electric system and carried spell-binders and a band of six pieces on it, making speeches from the vehicle in the streets in daytime and at night. The stage carried fourteen persons inside and twenty on the top, and with its band created considerable of a stir in the streets wherever it stopped, especially when, last Saturday, it stopped before the headquarters of the Police Department, of which Mr. Devery was formerly chief. This stage was used throughout the week preceeding that of election with great satisfaction. Curiously enough it was not a target for brickbats and washboilers despite the fact that it was used largely in the Bowery and East Side districts where the hoodlums have in the past made it dangerous for automobilists to venture with an automobile. Perhaps "Bill" Devery's campaign wagon was especially sacred to the denizens of those districts—at any rate it escaped unscathed. But not so did an automobile truck carrying a party of Fusion orators, a glee club and a band that ventured into the dangerous East Side section one night and had paper bags filled with water and pails of water thrown upon it from the windows above, and the bunting with which it was festooned set afire.

An innovation in this campaign has been the use of colored incandescent lamp signs on auto trucks with the lamps fed from the vehicle battery. A large stage truck has during this campaign been paraded up and down the streets of Harlem with the glowing inscription: "McClellan and Victory," in white lamps between two large red lamp stars. But none of the campaign managers contemplate the use of the automobile in carrying voters to the polls, as in populous New York the polls are so close to the homes of the voters that it is no trouble for the most inert citizen to walk. In the few cases of the physically incapacitated, horses and cabs are used for this work in all elections.

My Experiences in the Endurance Run.

BY WEBB JAY.

For the benefit of those who may still be interested in the remarkable story of the recent Endurance Run, I beg to submit a chapter giving some of my individual experiences in driving my White car on the 800-mile journey, especially those from which others may profit.

Leaving Weehawken at 7.03 on the morning of the start, I kept my place in the procession until, in the streets of Hackensack, one of my rear tires blew off the rim. An examination showed that the inner tube protection strip had been placed in the clinch, not allowing the shoe to get a proper hold. I replaced the inner tube in eleven minutes and had proceeded about six or eight blocks when the same tire blew off again. Apparently the first time the tire blew off, the casing had been so stretched that it would not hold properly. This time I tore out the protection strip and, replacing the inner tube in eleven and a half minutes, resumed the journey, being by this time practically the last in the procession.

We traveled the next seventeen or eighteen miles without incident and had practically regained our position in the line, when, at Mahwah, the same outer casing blew off for the third time. Having now used all of my inner tubes, I had to resort to patching. The tubes could not be repaired in the usual manner because of the great size of the sections which had blown out, and we therefore cut an old tube in two and telescoped a section from another over it and started up again after thirty-five minutes' delay. We found that the tire was leaking, but as we had used up all our glue we were helpless. We found that we would lose so much time by trying to keep the tire tight, that I decided to run on the rim. Accordingly, at Tuxedo I bought 180 feet of rope and wrapped the rim with this. Before reaching Central Valley, I had worn this rope out.

We had some small chains in the car for use on muddy roads, and I put these on at Central Valley in place of the rope. I went ten miles in this way when some links of the chain were worn through and as the loose ends, flying about, became dangerous, I took them off and ran into Newburg on the rim. Other cars, large and small, glided past me, and, in fact, all except one or two of the other contestants had had their lunch at Newburg and left the town, before we arrived there.

At the hotel, a telegram addressed to Windsor T. White was handed me. I opened it and it read somewhat as follows: "New tires are being sent you and will arrive at 2.45." Not having at that time heard that Mr. White had also had tire troubles, I wondered that a telegram addressed to him should so completely fit my situation.

Long before 2.45 I was restlessly pacing the platform at the railway station while my mechanic was filing down the rim, which had been much roughened by contact with the road. But my tires instead of arriving at 2.45 did not get in until 3.45. Finally, at five minutes after four, I left Newburg, and ran through to Pine Hill without a stop, reaching there at 7.30. I had a penalization of 230 minutes (all on account of a misplaced tire shoe) charged up against me. The next morning our car was the twenty-second to leave. We had not gone far, however, when we began to overtake, one by one, our less fortunate competitors. One large gasoline machine reached Unadilla before us and this we overtook ten miles farther on where it was stalled in such a position as to completely block the road. I waited here until five or six other cars had come up behind, when, with the united efforts of the various operators, observers and mechanics, we pushed the machine out of the road. From there on to Binghamton I had a clear road and traveled on without incident, reaching there first at 6.43 with a perfect score on that day.

Leaving Binghamton on Friday morning I had my only narrow escape on the entire trip. Just outside of the city a large delivery van turned out for a machine which was running just ahead of me and, as I presumed he would also let me pass, I did not slow up. But for some reason or other the van turned back into the road directly ahead of me. To have stopped the car in the space between us I knew was impossible. It chanced that there was a small private road at that place leading from the main road to a farm house. A small bridge was built over the ditch at the side of the road as an approach to this private road. I had no chance to turn off into the private road, but I drove my car on to this little bridge, thus avoiding collision, and at the farther side of the bridge dropped off fully three feet, as my observer estimated, into the ditch. I kept the power on and ran along in the water in the ditch until the opportunity was presented to regain the road. No damage to the car by this mishap was then apparent.

We were making good time and had overtaken the other cars when, sixteen or

eighteen miles from Binghamton, our rear spring broke, the belated result, I believe, of our jump off the bridge. I stopped and made a bumper out of an old inner tube and from there on we ran rather slowly. One mile outside of Elmira my rear tire blew off. This was on the same wheel which had been the center of all of my tire troubles on the first day, and I believe that this accident was due to the poor condition of the rim. I ran into Elmira on the rim and here secured a new tire and put in a heavier bumper on the broken spring. When we struck the memorable mud hole near the temporary bridge at Painted Post, (which proved so disastrous to so many of the other machines), my car hesitated an instant as we sank in the mire up to the hub, but I opened the throttle wide and we went through without stopping. Continuing on to Bath, we arrived there fourth.

From remarks made in the hotel it was evident that the fourth day's run would become a race to get into Buffalo first, and I was resolved that White 5 should at least have a "look-in." When we reached Buffalo there was no official there to take our time, as the official timer had not expected any of the contestants before about 4 o'clock. On the run from Bath to Buffalo, one two-minute stop was charged against me.

On Sunday, the officials of the run notified me that any car exceeding twenty miles per hour would be disqualified. Accordingly, with the aid of my guide book, I laid out a schedule for the next day's run of twenty miles per hour and the official records show that on Monday my running time for the ninety-six miles to Erie was exactly five hours. I arrived second, three minutes behind the first car, making a perfect run. On the next day, running into Cleveland I must confess that at intervals I could not resist departing from my twenty-mile schedule and the records show that my running time for the 103 miles was four hours and fifty-five minutes. The trip of sixty-eight miles from Cleveland to Youngstown was uneventful except that fifteen miles from my destination I broke a rear spring on a particularly bad "thank-you-ma'am," but completed the trip in slightly less than four hours without replacing same. On the last day's trip from Youngstown to Pittsburg, I reached Allegheny first, in four hours and fifty-five minutes and, after a considerable wait, ran into Pittsburg in a leisurely fashion with a number of other cars.

I have driven a car through the Mosquito Pass in Colorado, the highest wagon road in the United States, and have toured through old Mexico where there are practically no roads at all, and I state without hesitation that the recent New York to Pittsburg Endurance Run was the most severe test to which an automobile could be subjected, and that the public has received a magnificent demonstration of the qualities of the automobile, particularly considering the good condition of most of the cars on the arrival in Pittsburg.

Description of the Two-Cylinder Knox Car.

BY HERBERT L. TOWLE.

To persons familiar with the Knox single-cylinder runabout, the new double-cylinder machine of the same make will present comparatively few novelties. Nevertheless, as the Knox product is still known to many people more for its very excellent record or reliability than by its special features of design, a somewhat detailed account of the new machine will probably be of interest to a number of readers.

The two most characteristic features of the car—the "porcupine" cylinder and the long side springs—are, of course, well known. The latter are made to swivel in the front axle and in the "saddles" on the rear axle, so as to prevent twisting of the leaves on a rough road, and they have clips near the axle to keep them from opening on a rebound or spreading on a curve. Except for having a greater length and additional leaves, and for having rubber buffers on the rear saddles to soften possible bumps, the springs of the two-cylinder car are like those of the runabout.

FIG. 1.—THE TWO-CYLINDER KNOX CAR.

A simple built-up rectangle, of 2 1-2 by 2 by 3-8 inch angle steel, forms the main frame. A pair of strong lugs cast on each cylinder head receive heavy cap screws passing through the cross frame members, and these form the sole support of the motor and change speed gears, and take the pull of the chain.

The cylinder heads are cast integral with the cylinders and the valve casings are held in place by heavy forked cast-iron "straps," seen in the sectional cut. Although at first glance these forks might be thought both clumsy and of unsuitable material, they were adopted after the failure of both steel forgings and aluminum bronze castings. The explanation is to be found in the heat to which they are exposed, which causes a forging, or nearly anything but the stuff of which cylinders and pistons are made, to receive a set when strained, and thereby to bend progressively each time the screw is tightened. These straps, by the way, take the place of three-eared flanges in the older engines, and have the advantage that they cannot spring the valve casings out of true.

No gaskets are used with the casings, which are ground to their seats with emery. As the cuts show, the exhaust valves are operated by cams on a two-to-one shaft driven by spiral gears next to the flywheel and carried in bearings brackets attached to the cross members of the frame. Owing to the offset of the cylinders, one valve is operated through a link about 5 inches long. The inlet valve has a long, rather light spring, and is operated by suction. It is of mild steel, but the exhaust valve is of special non-pitting valve alloy, a steel with about 30 per cent. of nickel.

The arrangement of the valves, opening, as they do, directly into the combustion chamber, is one which has been recognized as giving a high efficiency in water-cooled engines, but it is here employed mainly because it reduces to a minimum the heating and consequent expansion suffered by the incoming charge on its contact with the hot metal. The same motive prompts the use of the relatively long stroke (the runabout cylinders are 5 by 8 inches, and the opposed cylinders 5 by 7 inches), which gives the combustion space a greater capacity for the area of containing wall.

The threaded pins which give the "porcupine" cylinders their name are first cut to length and then threaded by being rolled between dies. They project two inches when in place. The holes in the cylinder are started with the aid of suitably curved plates of 1-4-inch brass, drilled and clamped together. As no particular accuracy is called for, they serve the purpose of a jig as well as a harder metal. After all the holes are started, the jigs are removed and the drilling finished with the aid of

gauges giving a uniform thickness of metal under the holes. This work is done by boys, and as there are 1,760 pins in each cylinder, it will easily be understood that in the busy season a good half-dozen sensitive drill presses are constantly at work on it.

The open top crankcase is of cast iron, it being somewhat questionable if aluminum

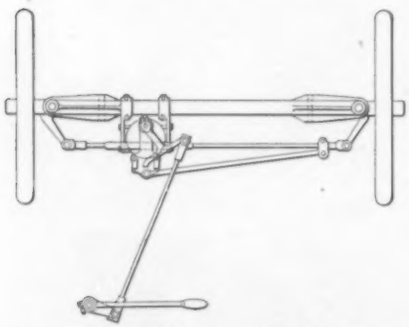


FIG. 5.—TOP VIEW OF FRONT AXLE AND STEERING CHECK.

could be made to give satisfaction when the motor is, like this, supported at its extreme ends only. The shaft is two inches in diameter in the bearings, and is extended on one side clear through the planetary gearing and beyond the side of the frame to receive the starting crank. On the other side the flywheel balances the weight of the gearing. Crank counterweights are used, even in the two-cylinder machine. The pistons are long, and have each three rings, bored slightly eccentric and cut zig-zag instead of diagonally. The connecting rods are H section aluminum bronze castings, lined with hard babbitt on the crankpins. The wrist pins are bored hollow and hardened, and are very light. Inserted bushings of hard babbitt metal, machined all over, are used in the main shaft bearings, and although the word "babbitt" commonly suggests an economy out of place in an automobile motor, the use of this metal seems to have fully justified itself in the present case. To begin with, the bearings are both large and long, so that the specific pressure is low. But the main reason, according to the Knox company, for the absolute immunity from bearing troubles which they report this year, is their adoption of "non-fluid oil" for these and all other important bearings, except the pistons. This "oil" has about the consistency of light grease, but it has the peculiar property of holding its consistency—*i.e.*, not melting—at any temperature normally met with in bearings, even up to the boiling point of water. Consequently, no rationally designed bearing supplied with this lubricant can ever get hot. In the Knox car the "oil" is fed by pressure grease cups to the center of the bearing, so that as it works out to the ends it must carry any grit with it. The crank-pin bearings, planetary gears, 2 to 1 shaft bearings, differential, and all other bearings wherever a grease cup can be attached, are lubricated with this same "oil."

The Knox carbureter has not been changed in two or three years. It is a simple form of float feed, spraying nozzle device, and takes air from a perforated pipe close to one of the cylinders. The throttle is located in the center of the tee beyond the carbureter, and it has a small dilution inlet which opens and closes with the throttle. Contrary to the usual custom, the ignition box and throttle are connected, the former being advanced as the latter is opened. Although the theoretical disadvantages of this arrangement are admitted, the makers believe that the net result is a gain in simplicity of handling. However, the two functions may be separated for the benefit of purchasers who wish them so.

The spark mechanism itself may fairly be called a unique feature of the car and appears to be far in advance of most devices of its kind in all the important features of reliability and current economy. It is a single spark device, no coil vibrator being used. The cam is indented, and rubs against a hardened block on the end of the contact spring, which is normally held out of contact by the cam. Both of the contact points—which are of Baker & Co's. alloy—are set in the ends of adjustable screws. But the essential feature of the device is the size and solidity of all the parts. The spring itself is long and fully one-sixteenth inch thick, and very stiff. The cam is not less than one and one-quarter inches in diameter, and is case-hardened. The rubbing block on the spring has beveled sides and a comparatively narrow face. Being made of hardened tool steel, its wear is very small. As contact is made by the pressure of the spring, the wear does not affect the operation until it becomes pronounced. The contact points, and the screws which carry them, are large, to carry the heavy spring pressure, and the net result is a mechanism which will do its work with as much regularity as the piston or axles, and is indeed almost the last thing to be looked at in case the motor fails to work.

The muffler is a long drum extending the full length of the motor. Inside it is a tube perforated all along its length, into which the gases discharge near its ends. Passing into the outer drum, they escape through perforations in the ends.

The motor has been described so much in detail because of the many particulars in which it differs from the conventional types. The remaining parts of the car are less out of the ordinary; but the high-speed clutch of the planetary gearing deserves more than passing mention. A section of this gear is given in Fig. 3. Of the three principal drums, the central one *A* is of bronze, and the others are cast iron. *A* has a long hub *A'*, which turns freely on the engine shaft and carries, fixed to it by two keys 90 degrees apart, the case-hardened sprocket pinion *B*. Drum *C*, with a hardened steel bushing, turns on the hub of *B*. Internal gears are cut in both *A* and *B*, meshing each with a pair of mild steel pinions *D* and *E*. Both pairs of pinions have case-hardened bushings. Pinions *D* turn on bosses cast on *A*, and mesh with spur teeth integral with a bronze disc *F*, which has a long hub and is keyed fast to the shaft. The third drum *G* turns loose on the hub of *F* and has bosses carrying pinions *E*, which mesh with a pinion

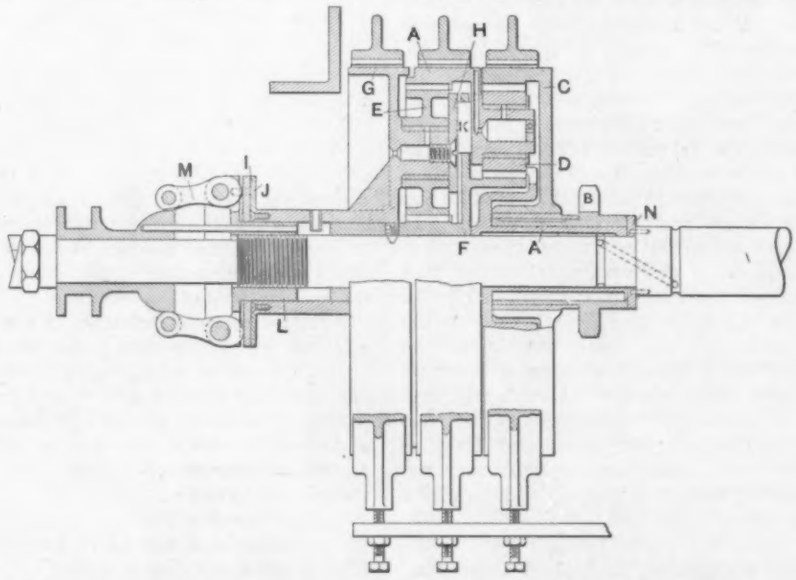


FIG. 3.—PLANETARY CHANGE-SPEED GEAR ON TWO-CYLINDER KNOX CAR.

cut on the hub of *F*. *G* carries also a flat cast iron ring *H*, and at the end of its hub is a loose steel ring *I* and a flat ring *J*. These form part of the clutch mechanism, and will be referred to presently.

Now, disc *F*, being keyed to the shaft, transmits the driving force to the gears. If drum *C* be held still by tightening the band around it, pinions *D* will impart the slow

forward speed to A, on whose hub A' is keyed, the sprocket pinion. If C be released and G held, the reverse motion will be imparted to A. For the direct drive F (and incidentally G) are locked to A. K is a round hardwood block, of which a number are inserted in F as close together as possible. Ring H is normally out of contact with these blocks, but G is movable endwise, and the blocks are slightly loose in F, so that a very small movement of G will lock the whole system. L is an adjustable collar carrying the clutch dogs M and serving as a fulcrum for them. At the other end the hardened steel collar N supports A against the thrust put on it when the clutch is engaged.

The clutch takes the place of an expanding ring clutch in the earlier machine, and is evidently greatly superior to it in many ways. It is unaffected by centrifugal force. It is wholly enclosed and protected from dirt. It does not burn out, because it gives up its heat so rapidly. It is readily adjusted; and, best of all, its wear is so small as to be practically negligible. A set of blocks will last at least a season, and when renewals are needed the only cost is that of lowering the motor and opening the clutch.

The band on drum A is of course the brake. On account of the large surface of the bands, ordinary leather has been found quite satisfactory as a lining.

The rear axle comprises a solid shaft extending clear through and keyed to one wheel, and a sleeve over the short or left end of it, keyed to the other wheel. Both shaft and sleeve run in Timken roller bearings in the spring saddles. The differential has bevel gears and a heavy cast-iron case, on whose left side is cast an annular flange bored to receive an internal expanding for the emergency brake. This ring, which is worked by a toggle motion from an outside lever at the left of the front seat, is cast integral with the left spring saddle. This saddle, like the other and in fact like

FIG. 4—LEMP STEERING CHECK

many parts of the car for which different materials are commonly used, is cast of a special aluminum bronze, mixed in the Knox Company's own foundry and said to have a tensile strength reaching 60,000 or 70,000 pounds. It is not especially light, having but about 10 per cent. of aluminum, but it is exceedingly tough and very uniform. Its especial value, in the eyes of its makers, is that it never fractures, but when overloaded always gives way gradually, thus affording due warning.

The emergency brake, when applied, tends to rotate the spring saddle with the axle, and puts on the left side spring a strain which it is not intended to bear. To relieve the spring of this unnatural strain, the flattened radius bars seen in the first two figures have been added. Their rear ends are adjustable for length in the spring saddles, in order to tighten the chain, and the spring ends are consequently left loose in the saddles to avoid cramping.

The front axle is a one-piece trussed casting of the same aluminum bronze that is so successfully used for many other parts of the car. Its section is that of an inverted U, filled in solid at the center and at the spring swivels, and with two cross bridges for stiffness midway between the above points. The truss rod has forged eyes at its ends, and is tightened by the central threaded strut till the originally straight axle is perceptibly bowed upward in the middle. The makers have used this type of axle in the runabout for three years, and the fact that they have retained it in the two-cylinder machine is the best evidence that it has given satisfaction.

All the 1904 Knox cars will have the Lemp steering check, this having been adopted in place of a screw and nut wheel steering gear after a thorough trial of both. Although the Lemp check has been before the public in a small way for several years, it is less well known than it might be, and a photograph showing it with the cover removed is therefore given. This photo-

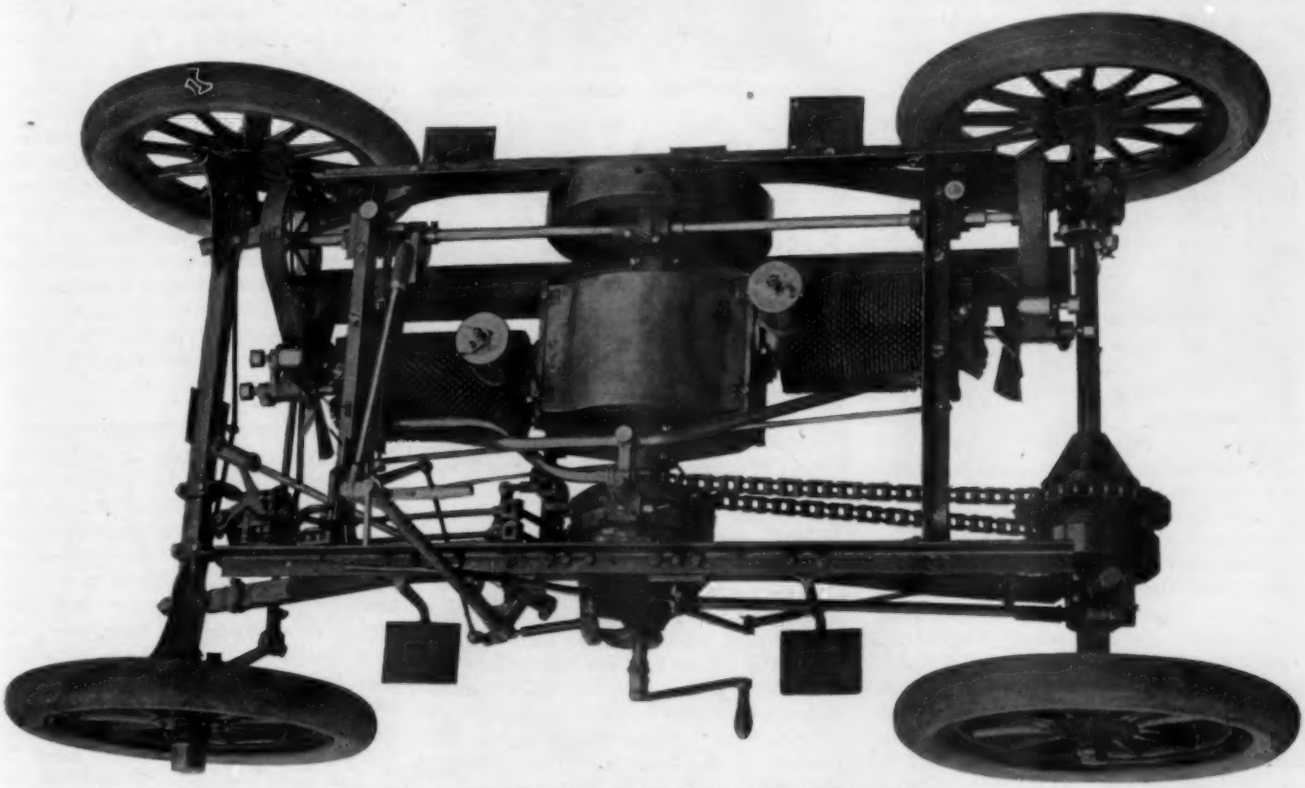


FIG. 2—CHASSIS OF THE TWO-CYLINDER KNOX CAR.

graph shows the check as fitted for attachment to the 1903 machines, it being found necessary in these to lower it by the brackets shown. In the new models the axle and check are designed for each other, and the much neater *ensemble* seen in Fig. 5 is the result.

The body of the check consists of an upper and a lower chamber, divided by a plate (removed in the photo). The upper chamber is merely a reservoir, which ensures the lower chamber being always full. It is normally covered, and glycerine —the fluid used—is introduced as needed through a hole with a screw plug. The lower chamber is divided by the radial bronze vane *A*, which is cast in one piece with the thick hollow shank *B*, to which arm *C* is strongly keyed and clamped. *A* is a nearly watertight fit against the crescent-shaped block *D*, and its bottom is recessed—leaving the bottom edge intact all around—to contain a small rocking piece with two fingers, one or the other of which may by rocking the piece be raised to push against ball checks *E* or *F*. This piece is rocked by a slight angular movement of stem *G*. Moving arm *H* one way lifts *E*; moved the other way, *F* is lifted. This allows the glycerine to flow down past the ball lifted, through the recess in *A* and up past the other ball, which lifts of itself, to the other side of the chamber. As it is necessary to lift the ball before *A* begins to move, there is a little lost motion between *H*, to which the connection from the lever is attached, and *C*, connected to the steering knuckles. This lost motion is taken up by the spring plungers shown, which bottom against adjustable stops at the end of their movement, so that the effort of steering is transmitted through the plunger stop directly to the end of *C*. The purpose of making *C* and *A* so massive is of course to resist the road shocks, which are borne by *A*, the ball checks *E F*, and the glycerine.

The control system of the new car is unchanged. The short lever at the top of the steering column is in the neutral position when pointing straight back. Turned to the right, it engages the high speed clutch. Turned to the left, it picks up the slow speed mechanism. The central rod in the steering column acts on the spark and throttle in the manner above noted. The right pedal acts on the service brake and the left on the reverse. Adjustment of the brake and friction bands is effected by disconnecting the forked ends threaded on the operating rods seen in the photograph, and giving them a turn or half-turn.

The liberal use of "non-fluid oil" for lubrication has been referred to. The cylinders have each a large sight-feed oil cup of one quart capacity. Two of the pinions of the planetary gear are lubricated by oil squirted through holes in drum into the interior of the bosses on which the pinions turn. The very liberal bearing surfaces of this gearing will be noticed, and it may be said that the same careful provision against wear extends to all other parts of the machine.

The two-cylinder car is put out in both tonneau and surrey styles, with bodies interchangeable. The front seats are divided and a canopy top may be fitted. The tonneau is very roomy and has a folding seat on the door. The weight is about 2,400 pounds with either body, and the maximum speed is thirty-five miles. The engine is conservatively rated at 16 horsepower. Fisk or Diamond double-tube 4-inch tires and 32-inch wheels are used.

In place of the rear seats, a touring box may be fitted, or a parcel carrier, and the Knox delivery wagon is but slightly modified from this arrangement. Besides the tonneau and surrey models in the two-cylinder car, light tonneau and surrey bodies are to be supplied with the single-cylinder machine, which will have a lengthened wheel base when thus equipped.

Big Car for Fall River.

William Durfee, the general manager of an ice and storage company in Fall River, Mass., has purchased a 40-horsepower Rochet-Schneider touring car from the New York agency for this popular foreign

WILLIAM DURFEE'S ROCHET-SCHNEIDER.

machine. The car is the first one of large size to be owned in Fall River. The tonneau for it has not yet been completed, but will carry six persons, making the whole seating capacity sufficient for eight. The wheel base is nine feet and the diameter of the wheels 38 inches.

Advantage of the Young Generation.

H. Spencer Allen, a student at Harvard law school, spent the early part of the past summer as an employee in the factory of the Electric Vehicle Company, in Hartford, Conn., to acquaint himself with the detail of construction of the Columbia gasoline touring car. He placed an order with the company for a car when he went to work, and followed each part of it through the process of manufacture. He helped to assemble the car, and when it was finished and he took off his overalls for good and drove the car away from the factory his fellow workmen were somewhat surprised to learn that they had been working with a "millionaire" college student who availed himself of his leisure in this practical fashion.

Correspondence

Tire Puncture Healing Compound.

Editor THE AUTOMOBILE:

We understand that you lately published a recipe for making a puncture cure, and we should like to get it, as we have a tire which would be a good one to try it on. A. BOWE & SON.

Meriden, Conn., Oct. 15.

The compound referred to was made of glue and molasses, and was very highly spoken of by its inventor, who gave us the formula for publication in January of last year. We have lately learned that it is open to the serious objection of fermenting after it is introduced, which destroys its consistency and injures the rubber. We suggest that our correspondent try the compound made by the Geo. P. Moore Co. and advertised on another page.

Angle of a Cone Clutch.

Editor THE AUTOMOBILE:

As a subscriber I am going to ask the favor of an answer to the following question: What is the best angle for a leather-covered cone clutch? The clutch is to be used on an 18-hp. touring car, and there is a difference of opinion, some favoring 13 degrees and some 15 degrees. The aim is to get the best angle so the clutch will both take hold and let go easily. B.

Jersey City, Oct. 31.

In general, a fine angle is to be preferred if it can be used, as it takes less spring pressure to hold it than a "rank" angle. But the finer the angle is, the greater is the need that the clutch cone be accurately centered in the flywheel, and the greater must be the reduction of motion from the clutch to the pedal. We do not know what is the smallest angle that can be used without danger of sticking, but presume it to be about 10 degrees. In practice, the angle is from 12 to 15 degrees according to the design and workmanship, the weight of usage favoring the smaller angles. One maker whose clutch takes hold very gradually, in spite of a fine angle, uses 12 1-2 degrees and a reduction of 40 to 1, but this reduction is rather exceptional.

Speed Change and Motor Location.

Editor THE AUTOMOBILE:

I have a Dyke 7-hp. single cylinder engine with Champion gear, but the gear is too light for this section. What good compact gear (giving three speeds and reverse) would you advise me to use instead? What would your views be in regard to mounting the engine in front, crosswise of the frame, and using a bevel gear transmission? Is the trend of the public toward slip gears, or how do they stand comparatively? Please state advantages and disadvantages of gears.

New Castle, Pa., Oct. 30. P. W. S.

Our recollection of the engine referred to is that it has a 5-inch bore and a 6 or 7-inch stroke. If this is the case, it is a slow speed engine, and it would be very undesirable to place it crosswise at the front of the car, either vertically or horizontally, as its vibration in that position would be very unpleasant. It would be best to keep the engine where it is, and to purchase a three-speed sliding gear transmission, if one can be found to fit the place. Our advertising columns have lately contained the names of several concerns manufacturing such gears. It is hardly likely that any 3-speed planetary gear would be found satisfactory, on account of the great waste of power in the first and second speeds. If no suitable gear can be found, it would be better to dispose of the engine and get a smaller high speed motor, and put this in front with bevel gear drive. This, however, would amount to building a new car.

Gasoline Motor Cars on Ferries.

Editor THE AUTOMOBILE:

Sir:—Will you kindly inform me what are the laws regulating the passage of gasoline autos over public ferries? In this part of the world the "powers that be" have decreed that no gasoline auto shall run under its own power either on or off a ferry boat, so I am compelled to push my machine the entire length of the vessel's deck.

CHARLES T. PARRISH.

Portsmouth, Va., Oct. 15.

Up to a couple of years ago, the United States marine laws forbade the carriage by steam vessels of gasoline except in sealed cans. When automobiles began to get numerous, this clause was amended to permit (not compel) captains of ferries and other vessels carrying a local traffic to accept automobiles for passage with gasoline in their tanks, it being only provided that the fire under steam carriage boilers should be extinguished. This provision of course, would sometimes necessitate a steam carriage being pushed off, if not on; but there is nothing to prevent a gasoline machine from being run on or off under its own power. Most of the New York ferries accept either gasoline or steam machines without hesitation, the only requirement being that the automobile shall be the last vehicle to run on board, so that in the event of trouble it can, if necessary, be jettisoned astern. We have never heard of this measure being necessary and recall no instances even of a machine catching fire. As a matter of fact, even the rule regarding burner extinguishment is not always enforced to the point of shutting off the pilot light also.

Captain Hamilton expects four new Locomobiles on Saturday next, which have all been ordered. They are large four-seated ones of 16-horsepower, and the captain is feeling quite elated over this new business.—Havana, Cuba, *Post.*

An Autumn Tour *via* Lake Hopatcong.

BY C. H. GILLETTE.

Have you ever done any automobile touring in the autumn? No other season of the year affords so wide a measure of freedom for enjoying the beautiful in nature.

There are many routes from New York City, radiating in all directions, where good roads and beautiful scenery go together. But there is none better than a tour through northern New Jersey to Lake Hopatcong and return. This tour can be made in a circular route. While it could

A SCENE CLOSE TO THE ROAD.

be done in a day comfortably, for the sake of keener enjoyment of the trip, it is better to take two days. The entire trip is but little more than one hundred miles.

There are three ways of getting out of New York upon this route. Two of the roads lead over the New Jersey meadows, and one from Fort Lee to the Hackensack turnpike. The Fort Lee road has unquestionably the best surface, but it is by several miles the longest. Between the two roads over the Meadows there is very little choice. I might remark here, that there are in reality four roads over the New Jersey Meadows, but only two of them are fit to be considered. The plank road from Jersey City is an abomination, but the Newark turnpike is scarcely better. The latter has the advantage, however, that its worst features are concentrated into a short stretch of about four and one-half miles, after which good roads follow. The Paterson plank road is a torture to any machine for about seven miles, and is, if anything, a little worse than the Newark turnpike. The assumption is that the tourist would take the Newark Turnpike after having crossed the ferry over the Hudson River.

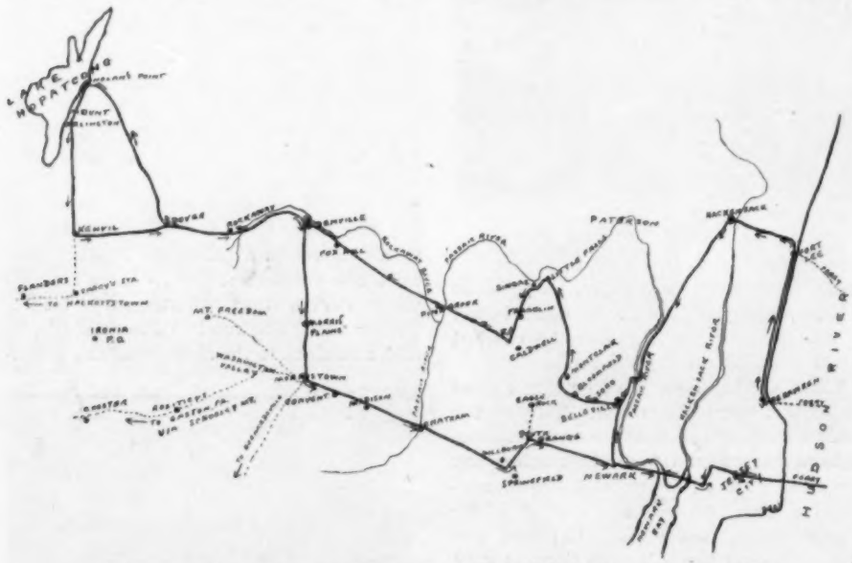
Leaving the ferry dock, you go one block ahead; then turn left one block; then turn right into York Street; then left into Henderson Street; then again left into Mercer Street. From here you proceed straight ahead through Glenwood Avenue to the Hudson County Boulevard. Follow the Boulevard for about one mile to the Newark Turnpike, which is a cobble-stoned pavement with trolley tracks, into which turn left. At the foot of the hill hereabouts begins what once was a macadam road. It is now in very bad condition for about a mile, then improves a little for about two miles, and, as though to make you pay for the improvement, becomes *very* bad for a short distance.

Following this road you finally reach Broad Street, Newark, along which you ride to reach a good asphalt road a little beyond. Keep straight ahead along this road until you reach the cemetery, where you turn left one block and then right over a block pavement, passing the cemetery and reaching the asphalt street again. At this point be careful not to take the macadam road that branches to the left. Two miles beyond and after passing under the Erie Railroad (the Greenwood Lake Branch) at North Newark, turn left up Mill Street along Second River and nearby the Old Mill Ruins. Go over the Erie Railroad at Soho, where there is a curious railroad station built about a large tree. Continue along, passing the Copper Mills and around a sharp curve. There you come upon a short steep hill, beyond which the road runs along the Morris Canal, for a short distance. Then there are two more curves into Montgomery Street. Follow along this road to Franklin Street, and, one block to the right, you take Washington Street, continuing straight ahead for one mile to the Orange road, into which turn to the right. One mile beyond you come to a point where the road branches in five directions. Turn sharply to the left into Gates Avenue and then to Mountain Avenue. This is one of the most beautiful streets in Montclair. One mile beyond you turn into Bloomfield Avenue. Here you may turn left over the mountain and then through Verona, Caldwell, etc.

CATARACT AT LITTLE FALLS, N. J.

Or, if you wish to see more of the beautiful residential section of Montclair, keep away from the trolley and the main roads and take Upper Mountain Avenue. This is reached by going straight ahead for two blocks to Van Vleck Street; then turn to the left one block to Upper Mountain Avenue. This beautiful roadway runs along the edge of the Orange Mountains. Along it are the residences of many well-known New Yorkers. It commands a view of the Oranges. In running along this road one cannot but envy the residents the natural scenic advantages which their homes have. Staten Island can be seen and glimpses of the City of New York and the west slope of the Palisades. There you may have scenery, if not on a large scale, still in beautiful perspective.

From the western slope of the Oranges, where this road finally leads you to, a magnificent panorama lies before you.



ROUTE FROM NEW YORK TO LAKE HOPATCONG AND RETURN.

Northward are the Ramapo Mountains. Westward are tier after tier of hills, rising like steps out of the horizon. In these hills to the westward is situated Lake Hopatcong, your destination. Directly below lies the Passaic Valley, with the Passaic River, affording a bird's-eye view of one of the most beautiful sections of the State of New Jersey which must be seen to be appreciated.

Going down the western slope, you have to follow three short curves and then a steep descent, beyond which you go over the canal and through Little Falls. Outside of the town is a bit of nature which well repays one to see. The rapids plunge down through a gorge at a distance of eighty feet and with the ruggedness of the immediate surroundings make a wild and picturesque scene.

To reach this little side view, you turn to the right, after passing a factory on the way out of Little Falls, to a bridge one block beyond the road. The accompanying picture was made from this bridge.

After returning to the main road again, you continue straight ahead through Singac crossing the Pompton Turnpike and following alongside the Passaic River for one-half mile. The road then bears to the left through the well-known Fairfield Dairy Farms to Franklin. You now come out to Bloomfield Avenue, passing a small church at the foot of the hill below Caldwell. Turn to the right and follow the road through Pine Brook, Fox Hill and Denville to where the road widens into a triangle, out of which it branches in two directions. The road to the left goes over Mt. Tabo to Morristown. But you keep upon the main road to the right through Rockaway, where you take the left branch of a fork in the roads at the center.

Keep to the left at the canal, and cross it one-half mile or so farther on. Approximately one and one-half miles beyond this point again cross the canal and the railroad bridge. Then the road turns abruptly to the right at the foot of a hill. At this point caution should be observed. A little beyond is Dover. Instead of keeping ahead through Mine Hill and Kenville, turn to the right into North Suffolk Street, opposite a large white hotel. Again cross the canal and Rockaway River, beyond which turn to the left one long block. The road then turns to the right through Spicertown, and Berkshire Valley to Woodport.

From this point the road runs through a heavy wooded country. The forest runs through the Berkshire Valley, up the side of Brookland Mountain to the shores of Lake Hopatcong. This short stretch of riding from Woodport through these woods is a delight to every sense. While the perspective is now lost in the density of the wood, you see at close range the variegated colorings of the foliage.

The road leads on through the Berkshire Valley where, if the trees permit, you may get glimpses of Mt. Olive to the south, upon whose crest lies Budd's Lake and a little to the north of which is Mt. Arlington. Straight ahead you have the steep ascending grade of the Brookland Mountains, to one side of which is a deep gorge, that lends a touch of fierceness to the scene.

After having passed over the mountain about one-half mile or more, you turn to the left, just where there is a newly-completed building on a corner, and again plunge into a more thickly wooded stretch. The road is rough but still fairly good riding. You are just beginning to enjoy the twilight of the trees when you come suddenly out at Nolan's Point,—and behold Lake Hopatcong! There is scarcely any need to tell anything about Lake Hopatcong. It is too well known to need any sketching. Suffice it to say there is a road which leads practically all the way around the lake, from which a splendid view of its limpid waters and the hills beyond can be obtained.

The Return to New York.

The return road to New York passes Nolan's Point southward along the shore of the Lake to Mt. Arlington, where the large hotels are situated. You are upon Mt. Arlington Boulevard and for several miles farther down is a winding steep descent. A little beyond the foot of the hill you take the right-hand road at the forks. It is a narrow way, and it would be difficult to pass any vehicle while upon it. It runs under the arch of the railroad bridge and beyond into Kenvil. There turn to the left through Mine Hill and Dover.

The road from Dover runs through Rockaway to Denville. This short stretch is the same road which you have traversed before in the opposite direction. At Denville, the road comes to a fork. The right-hand road leads you over Mt. Tabo and southward through Morris Plains, where the road turns to the right over the railroad, along Speedwell Avenue to Morristown. Just to the south of the city is Mt. Washington. At the Green turn right along the main street; then turn left along another street, which, a little farther on, runs into South Street. One mile beyond take the left-hand road into Madison Avenue—a part of the old Morris Turnpike and an excellent road for riding. This leads you through Convent, Madison, Chatham, about a mile north of Summit, over Chatham Bridge to Milburn.

Three miles out of Chatham, at the foot of a hill, you pass under a stone railroad bridge, a mile beyond which you come to five forks in the road. The road straight ahead runs through Springfield to Elizabeth and *via* Freylinghuysen Avenue, through Waverly to Newark. If you wish to take this means of return, you go into Newark by way of Clinton Avenue and Halsey Street to Bridge Street, and then over the Meadows to Jersey City. But by far the better road and more interesting is the one through the Oranges. You take the road to the left from Milburn

and about two miles beyond take the left-hand road at the forks, where the single-track trolley branches off into Valley Street. Continue to South Orange Avenue; then turn to the right up a hill and to the left into Center Street. At the Park you take the right-hand road (Harrison Street), one of the most beautiful driveways in the Oranges, until you reach Main Street, where you turn right one block into Prospect Street and several blocks beyond right in to Park Avenue. Then turn right into Broad Street, Newark, then into Bridge Street, which leads you over the Meadows.

Having time and the inclination, you may visit Eagle Rock Hill, the scene of several automobile hill-climbing contests, which affords a remarkable view from a high promontory commanding a wide range of territory.

To reach Eagle Rock turn to the left under the railroad tracks from the hotel in Milburn. The road leads up a short hill and branches to the right into Brookside Avenue. Follow this roadway about two and one-half miles alongside a brook, which ripples into numerous small lakes over a stony bed and justifies many a halt for side views. Then turn to the right to the foot of a steep hill with a sharp curve at the bottom. You turn to the left later into Cherry Lane and follow a mile of good dirt road through the woods alongside the Orange Reservoir, until you come upon Northfield Avenue, which you follow for one and one-half miles to St. Cloud. There you turn to the right at the stone church, one block beyond which you turn to the left into Prospect Avenue and continue straight ahead for two miles to Eagle Rock Road, into which you turn right and follow for one mile to Eagle Rock.

The view from the promontory is extensive. Directly at your feet lies Bloomfield, Arlington, and, still farther beyond, the Meadows. Beyond that, dimly distant, you may see Jersey City and the steeple buildings of lower New York. At your right hand are the Oranges, Newark, Elizabeth and Staten Island; and, with field glasses, even the Lower Bay and Coney Island can be seen. To the left you may see Montclair, Passaic, Rutherford, and the many little suburban towns on the western slope of the Palisades. Here before you and to the right and left of you is a stretch of country thirty miles from the north to the south and twenty miles into the east, made up of farms, woodlands, meadows, towns, cities, including the greatest, if not the largest, city in the world.

You have had your spin down the grade of Eagle Rock. You have enjoyed it. You are satisfied. You have not only seen the place where the hill-climbing contests have been held, but you have held a little contest of your own. You are delighted and you tell your friends what your machine can do.

But to return—continuing on along the road upon which you have come to reach Eagle Rock, pass down the hill to West Orange, (your experience over again), where you turn to the right along the trolley tracks to the entrance of Llewellyn Park. Turn to the left into Park Avenue, which you follow for four miles to Broad Street, Newark, and then by way of Bridge Street to the road over the Meadows. Having traversed Jersey City and crossed the ferry, you are in New York.

As a tour for the autumn I cannot offer a better one than this. It can be made shorter or longer in the matter of miles. Roads are universally good in New Jersey and those along this route are no exception. There are bad spots, to be sure, but these are few and far between.

I have gone thus into the detail in the description of this route as to the turns which it would be necessary for the tourist to take, for this reason, that New Jersey roads have one fault—they have apparently neither purpose nor direction. They wander over the country in a hither, thither, willy-nilly manner, that is baffling to the tourist. A good highway in this State, especially in the northern part, is just as likely to lead you to an out-of-the-way and unheard-of place, as to a well-known center of population. Again along New Jersey roads you come upon purposeless forks in the road. You take one perhaps whose direction seems to be the direction which you wish to follow and find that before you have gone many miles you are well in the way of completing a circle.

If you have not yet this autumn done any touring, try this—for your own sake. No, it is not too late in the season. November is not too late, although, of course, October is the best month. It is not too late until the first heavy snowfall.

Endurance Route Retraced by the Rikers.

Mr. and Mrs. A. L. Riker, accompanied by J. A. Kingman, of the Locomobile Company, arrived in New York last Thursday at noon in the Locomobile gasoline touring car which was No. 36 in the Endurance Run, after retracing the way over the entire route from Pittsburg. The roads and the weather were worse in some respects on the return trip than during the contest itself, the mud being deep and pasty, many of the washed-out bridges and new washouts across the roads not having been made passable by temporary bridges, and the weather being at times intensely cold for automobile driving, with snow falling when the party passed through the Catskills. The greatest annoyance, however, was the frequent losing of the way, as there were no traces left of the confetti scattered by the pilot cars in the run two weeks before, and all the directions in the route book had to be reversed, which was very puzzling. All of these conditions, combined with the fact that Mr. Riker had not sufficiently recuperated from the weariness and nervous strain of driving this car almost continuously through the latter half of the endurance run to overake the leaders, and that there was a woman in the party, precluded an attempt at a record run on the return trip. Nevertheless, there were no delays on account of Mrs. Riker, who was often the first one of the party prepared and eager to resume the journey. And that the hardships of touring through all but impassable country in the worst of weather had no injurious effects upon her seems

THE RIKER PARTY IN THE FIRST SNOW OF THE SEASON.

well proved by the statement that Mrs. Riker gained ten pounds in weight during the sixteen days' experience. She was happy and vivacious throughout, many snap-shot photographs taken near the end of the return trip showing her jovial countenance.

The start on the return journey began at noon on Tuesday, October 20, at Pittsburg, immediately after the car was released by the endurance run examination committee and after fitting new brake bands to leave nothing undone to insure safety on the bad hills. Eighty miles were covered the first day and the same distance the second day. Mr. Kingman joined the party at Erie and they proceeded to Buffalo the third day. A short distance out of Batavia, on the following day, two teeth on the large bevel transmission gear broke when the car was run into heavy going at the side of the road in passing a team. It was one of the original gears which had done service through the 30,000 and odd miles that this car had been run, and had doubtless been cracked on some of the hills in the endurance run. Upon removing it to replace it with a new one at Batavia, the break showed evidences of not being fresh, and it also developed upon a close examination that the gear had been forged the wrong direction of the grain of the metal. While repairs were being made the Stearns No. 35 passed through on the way back to New York.

Leaving Batavia the following morning they reached Binghamton the next night. At many places on the road during the day evidences of the passage of the cars in the endurance run ten days before were observed, especially in the vicinity of Bath and Painted Post. One peculiarity especially noticeable where the road was broad and level, was the whole surface was still cut with deep ruts made by the machines, the cuts all being as evenly spaced apart as if made so purposely. Presumably the object of the drivers in not following in the ruts of preceeding cars was to avoid going too deep into the mud. In one place no less than twenty of these parallel ruts were counted.

It was snowing hard when the departure was made from Binghamton the following morning. After consulting road book and inquiring the route from a number of residents, the tourists started on a road that after six miles of traveling grew exceedingly bad and finally came to an end in the woods. Then it was discovered that they were on the wrong side of the Susquehanna River, and were obliged to retrace their way back to the outskirts of town and make a new start. Altogether this cost a loss of about two hours. When first starting, it had been intended to make Pine Hill that night, but this delay and the fact that the roads were in places so deep with sticky clay that hills had to be descended on the intermediate gear instead of coasted, made it impossible, and a stop over night was made at Delhi, where the inhabitants were eagerly awaiting the arrival of Mrs. Riker, who throughout the trip was pointed out to one another by spectators with many comments upon her pluck and endurance. The party was given a hearty welcome, and a huge log fire built in the big fireplace, as the weather was biting cold when they arrived. During the evening

FROM RETURN TRIP OF RIKER PARTY OVER ENDURANCE ROUTE.

At a Temporary Bridge—Old One Washed Away. Snap-shot from Car—Horse Driver Fears Encounter. Debris on the Susquehanna. An Obstinate Tire Casing.

many stories were related of the troubles of the belated contestants in the run who got "hung up" between Pine Hill and Unadilla.

The ground and standing water was frozen in the morning, but Mr. Riker had wisely drawn off the water from the radiator of the car. Pine Hill was reached at noon, and then, on the stretch of good State road in that locality, the engine was let out at top speed and good time was made until near Hurley the car plunged into a washout across the road only two feet wide but very deep. This broke a spring but by strapping a rail under it the car was brought into Kingston about sundown, where all the next morning was spent in putting in new leaves and readjusting the brakes.

At one place in the Catskills on the preceding day it became necessary to drive up over the mountain to avoid an impassable washout. They climbed up and up and up, but what would have proved a monotonous trip, otherwise, was relieved and made most enjoyable by the magnificent views of the mountain country.

The start from Kingston could not be made until 2.30 P. M., and then the party promptly lost the way twice in getting out of town. It was here, too, that the outfit caused the first runaway—a team of horses hitched to a farm wagon and left without an attendant or without hitching. Much trouble had been experienced all along the trip with horses, though in many cases the drivers—particularly one woman—showed far more excitement than their animals. In many cases the drivers turned off the road into open fields to let the automobilists pass.

From Kingston to Newburg was an easy and delightful run along the bank of the picturesque Hudson, but the party took the wrong road again out of Newburg. They drove a long way west from the turn and then had to retrace the way for another start. By the time they had gone five or six miles from town after the second start it had grown dark enough to light the lamps. They drove along rapidly through the dark until they began striking such deep washouts that Mr. Kingman begged Mr. Riker to slow up.

The next and last day's run proved very interesting owing to the many evidences of the recent flood, such as broken bridges, washouts in the road, wrecked houses and undermined railroad tracks. At one place on the Tuxedo road it was necessary to go a quarter of a mile through a field to pass a washed out place in the road. After passing Hackensack and getting into the high State road, the going was fast and fine; the transmission gave no evidence of the new gear, the engine ran smoothly and at its best and the party entered the metropolis in high spirits. Although they had had to repair a couple of punctures on the road—once as a result of picking up a nail on good road—the tires had given no trouble, and neither had the motor.

DARRACQ, RENAULT AND PACKARD RACERS AT BRIGHTON BEACH MEET, OCTOBER 31.

Notes of Brighton Beach Race Meet.

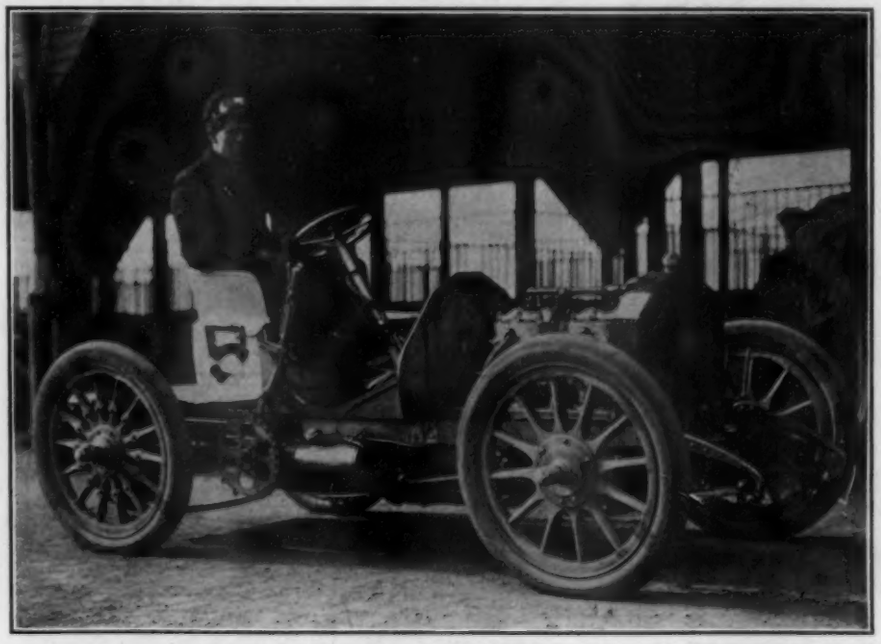
Saturday's races had a total of fifty-five entries with twenty scratches made, leaving thirty-five starters. Chairman Pardington said in regard to the matter of entering and scratching without excuse, "Next year when the sport is on a firmer basis we shall, of course, have to take some action to enforce the rules and compel entrants to start in all races entered for or show a good excuse. I, of course, realize that it is a constant menace to the game to have so many withdrawals from the card, but what can be done at a time when all the starters possible are wanted? We do not care to drive people away from the sport at this time. Later on the drivers will be forced to live up to the rules."

The football game between Columbia and Yale drew 30,000 people and kept thousands away from the automobile races without a doubt.

There can be no doubt that American people like to scent danger. Slow races do not attract them, no matter how excellent the competition; but let a man slip and slide around the bank in a hair-raising way and the crowd rises in excitement to predict all sorts of things. Champion's accident, speaking in a cold-blooded way, was what they looked for. In Mexico the people cheer the men for killing the bull or the bull for killing the man, and Americans are just as cold-blooded.

There were three hundred automobiles in the parking space, in fact, half of the people occupied the machines in which they drove to the track. This caused the poorly filled stand.

As a result of the protests and counter protests lodged at the automobile races at Brighton Beach last Saturday, the Racing Board of the A. A. A. has many an interesting question to solve. E. B. Gallaher, owner of the Georges Richard-Brazier machine, and F. A. La Roche, owner of the Darracq machine, are supplying the bone of contention. Mr. La Roche avers his belief that Mr. Gallaher took unfair means to influence the handicapper by his entry in order that he might win the race. This Mr. Gallaher denies and has taken several matters up with the Racing Board for a decision. He has written to Chairman Pardington asking for a decision on a question which will need some considerable consideration. Mr. Gallaher con-



J. J. MacMULKIN IN 30-HP. AMERICAN DAIMLER CAR, AT BRIGHTON BEACH.

tends that having ridden in and won his heat and having been announced as the winner of that heat, he should at least have been allowed to start in the final under protest, thus bringing the issue to the attention of the Racing Board for a decision. Mr. Gallaher holds that this is customary in other lines of sport from which many of the rules of automobile racing have been taken.

Mr. La Roche believes his protest to have been just in every way, contending that the car driven by Mr. Gallaher did not belong to him as is required in the rules. This Mr. Gallaher denies emphatically.

It would naturally be supposed that drivers in travelling around a mile track would have the laps always in their mind and know the time of finishing, but such is not the case. La Roche says that he keeps no track of distance. He asked Starter Picard to stop him, and Picard made an especial effort with La Roche, who ran over his distance several times in spite of the starter's efforts.

The A. A. A. Racing Board has taken a very decided stand on one subject, that of post entries. Upon protest a post entry will be disqualified in any race according to Chairman Pardington.

A red lantern was needed to stop the last race on the card. M. G. Bernin in W. G. Brokaw's Renault ran several miles over the distance in the concluding handicap because it was too dark to see the signals.

Peter Prunty, the announcer, has a voice which fills Madison Square Garden, but the cracking of the motors was too much for Prunty whose hands went up in disgust again and again as he tried to overcome the sound of the motors when making an announcement.

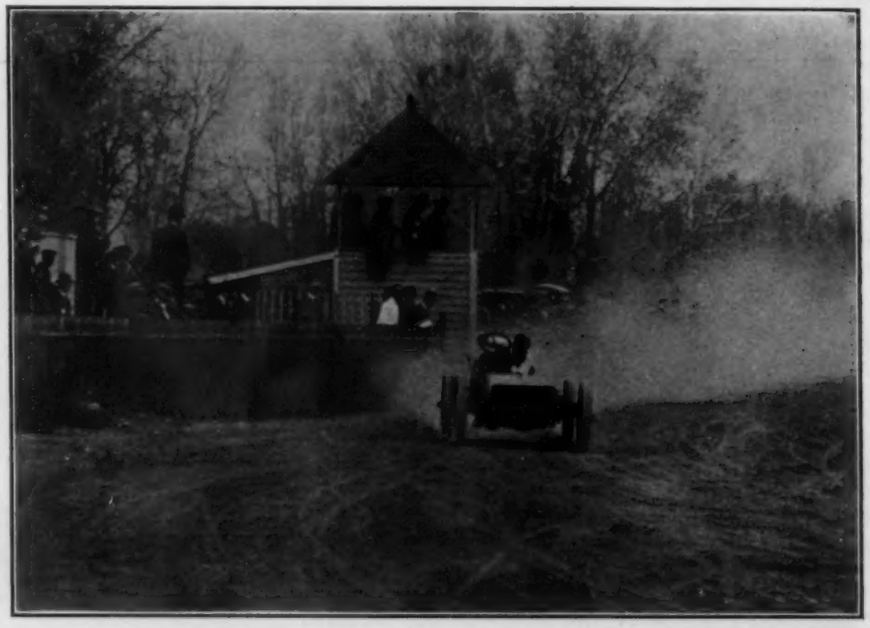
W. K. VANDERBILT JR., and W. G. BROKAW
Under the Grand Stand, Brighton Beach Races.

DENVER MEET WHERE OLDFIELD BROKE SEVERAL RECORDS.

DENVER, COL., Oct. 31.—Barney Oldfield, running his racing machines with all the skill and daring which have placed him in the front rank of chauffeurs, broke three of his own records at Overland Park Thursday, October 29, and the daring chauffeur himself regards his Denver performances as among the most satisfactory in his experience. Had it not been for the late hour of his trial against the mile record, Oldfield is confident that he could have driven his machine in 52 seconds. As it was, the dusk made it absolutely necessary to use some caution. Despite this fact Oldfield wrought five thousand spectators up to a high pitch of enthusiasm when he covered the mile in :56 3-4, his best previous record being :55 4-5.

Oldfield, in his famous Gordon-Bennett racer, had no trouble in breaking the five, ten and fifteen-mile records. He covered five miles in 4:45 1-2, the previous record being 4:54. The ten miles were covered in 9:34 1-2, the best previous record being 9:45. The fifteen miles were covered in 14:24 1-2, against the previous record of 14:35. The track was in perfect condition, and at the conclusion of his attempts Oldfield said he thought it would be a long time before he would secure a course equally as good.

An unfortunate feature of the afternoon was the burning of a beautiful racing machine owned and operated by Charles Bilz. The car was made in the shops of the Colorado Automobile Company and had never been used at any previous event. The cause of the accident was a leaky gasoline valve, which Mr. Bilz discovered just before starting in a race.



OLDFIELD MAKING HIS FAMOUS SHORT TURN—AT DENVER RACE MEET.

The first race was for five miles, for gasoline machines costing $1,000 and under. It was won by E. L. Mathewson in an Oldsmobile; second, Walter Schmidt, Cadillac; third, E. W. Swanborough, Rambler. Time, 10 minutes.

Second race, five miles for tonneau cars, carry full loads. First, B. G. Campbell, Winton; second, A. T. Wilson, Toledo; Time, 9:37 1-2.

Third race, five mile motorcycle handicap. G. S. Maxwell, Max, scratch; second, Earl Staley, National, 2:00; third, W. Cohagan, Cohagan, 1:10. Time, 7:08 1-2.

Fourth race. Five miles by Barney Oldfield in 40-horsepower Baby Bullet to beat his record of 4:58 4-5 made at Cleveland. Time, 5:22.

Fifth race, five-mile open to machines costing $3,000 or less.—Charles Bilz, White; second, B. G. Campbell, Winton; third, E. L. Mathewson, Oldsmobile. Time, 7:20.

Sixth race, five-mile handicap, the White being given two minutes. It was in this event that Bilz discovered the accident to his machine. Oldfield, in the Bullet, made the five miles in 5:29.

Seventh race, ten-mile handicap, open to all machines.—B. G. Campbell, Winton, 5:30; second, E. L. Mathewson, Oldsmobile, 6:30; third, E. W. Swanborough, Rambler, 8:10; fourth, Barney Oldfield, scratch.

Eighth race, fifteen miles trial for record by Barney Oldfield.

A feature of the day was the exhibition mile given by the $13,000 machine of Lawrence Phipps, the well-known millionaire philanthropist of Denver. This machine, which was piloted by Mr Phipps' chauffeur, John Birdener, ran fourth in the Paris-Madrid road race, in which so many contestants lost their lives. Mr.

Birdener is twenty-four years old and has been employed in an automobile factory since he was fourteen. He made the mile in 1:16, despite the fact that the car was not stripped for racing. Mr. Phipps rode the mile with his chauffeur.

On Saturday last Chairman A. R. Pardington, of the Racing Board of the A. A. A., made the statement that Oldfield's Denver records are official. S. M. Butler, secretary of the A. C. A., and a member of the Racing Board of the A. A. A., issued a sanction for the meet in Denver for October 29 by wire in Mr. Pardington's absence. A report has been published in the newspapers to the effect that Chairman Pardington had refused to recognize Oldfield's records due to the neglect of the promotors to secure a sanction.

CARS FOR TOM COOPER FROM GREUTER AND MATHESON.

DETROIT, Oct. 28.—Tom Cooper has made the statement that during the winter he will build two new racing cars, one an eight-cylinder monster for the free-for-all class and the other able to get into the 1,800-pound class. It is said that the old-time bicycle champion aspires to compete in next year's Gordon Bennett race in Germany.

The eight cylinders on the big car, Cooper says, will be divided in batteries of four, each capable of being worked independently of the other. Should the car come up to expectations, Cooper will start with it for Europe in time for the spring road races. His experience abroad as a cyclist will stand him in good stead, and his acquaintance with foreign racing men and manufacturers, he thinks, will be of much value. Cooper says the plans for the cars are practically finished, and arrangements for their construction have already been made.

It is reported that Cooper has joined forces with the Matheson Car Company of Grand Rapids and that the racers will be built by that concern.

Charles Greuter, formerly of the Holyoke Motor Company, Holyoke, Mass., consolidated his interests recently with the Matheson company, and was in Grand Rapids last week arranging to move the Matheson shop machinery and automobiles to Holyoke, where the company will occupy Mr. Greuter's old plant. Work on the 1904 Matheson touring cars will be resumed as soon as the necessary parts reach Holyoke, and Mr. Greuter expects to have four vehicles ready to exhibit at the New York Automobile Show in January. The motors are practically finished at the present time.

Aspirants for International Cup Honors.

There were rumors last Saturday that Barney Oldfield, Tom Cooper and Earl Kiser might compose the International Cup team next year. Cooper is building or about to build an eight-cylinder car of immense power and novel design, and has announced his intention of trying to get on the team. Kiser is driving his Mohawk racer, which has been demonstrated to be a fast car. Both Cooper and Kiser raced in Europe as bicyclists and are familiar with European ways. The trio are all old-time bicycle racing men. Cooper was champion of the sprinting cyclists in 1897 and left the cycle track to enter automobiling. He joined Henry Ford and together they built the Ford-Cooper racers, one of which Oldfield drove in his sensational record breaking the first half of this year. Oldfield was once the amateur champion of Ohio and later a professional rider of note. He rode a motor pacing machine for a time, but quit the track to go with Cooper. For years Kiser was called the "Match Race King" in cycling circles owing to his victories in match races against Cooper, Bald and others. The trio are all young and daring drivers, gentlemanly in conduct and possessed of private means.

L. P. Mooers of Cleveland is another aspirant for the team, and is expected on the other side of the water when the next International Cup race takes place. He promised the Europeans that he would return to give them a run in the next race, and that he will do so seems probable.

L. R. ADAMS. H. L. TOWLE. C. J. DIEGES. LAWRENCE ABRAHAM. F. G. WEBB.
S. M. BUTLER. A VISITOR. S. D. SEE. PETER PRUNTY. ROBERT STOLL.

ON THE JUDGES' STAND AT BRIGHTON BEACH RACES.

Percy Owens is not certain whether he will go or not, but it is practically certain that the same manufacturers who entered the cars last year will again be represented in the elimination trials. The drivers may be changed and perhaps one or two other makers may desire to take part in the trials, though this is not certain. It is known that several powerful racing cars are in course of construction and it may be that the International Cup is in the minds of these makers. Three months remain before the decision must be made and many interesting things may occur in that time.

Texans See Two-Minute Machines.

San Antonio, Texas, was treated to its first automoblie race meet on the afternoon of October 25, and the sport-loving Texans were highly pleased, even if there were no racing cars, and no celebrated drivers to compete. There races were all of the two-minute order, but the finishes were good. Bicycle races made up part of the program. L. F. Birdsong won the three-mile event for cars weighing under 1,500 pounds in 6:30 2-5; Cooper was a good second. In the three-mile race for cars weighing 1,000 pounds and under the order was reversed, Cooper being the victor. In the five-mile open Anderson was first, Crothers second and Cooper third.

EXODUS OF DARRACQ MEN TO EUROPE IN QUEST OF HUGE MACHINES.

One of the most prominent factors in automobile racing next season will be the American Darracq Automobile Company, which will have five racing cars in the field of competition. The company has ordered three new racers in addition to the two that have been used by F. A. La Roche this year. One of the new cars is to be a monster 180-horsepower to be entered in races for the free-for-all class, while the others will compete one in 1,800-pound class and the other in the 1,200-pound class.

F. A. La Roche, New York agent for the company, confirmed the rumor of the order and said:

"Our 180-horsepower machine will have to beat fifty seconds on the track or go to the scrap-heap. I do not know, but it is probable that I shall drive it, and I am going right out after Barney Oldfield. I will sail for France some time this month to personally superintend the building of these machines. I may or may not bring back French drivers with me for the cars, but probably not, for there are good men in this country who may be easily trained for them."

On his European trip Mr. La Roche will be accompanied by Robert R. Debacker, Henry Mahl, Charles D. Coko, and Charles L. Auger, all of the Darracq company. The party will visit London, Paris and Cannstatt.

SOCIAL SUCCESS FOR FIRST RACE MEET ON BRIGHTWOOD TRACK.

WASHINGTON, Oct. 29.—Washington's first automobile race meet, which was held yesterday afternoon at the half-mile track of the Brightwood Driving Club under the auspices of the local association of automobile dealers, was as successful as could be expected under the adverse conditions prevailing. There was a fair turnout of automobile enthusiasts, including many people of note in the official and social world, and while the races were not well managed, those who were present seemed to enjoy the contests. It is believed that automobile racing will become popular here if the sport is conducted in a proper way and on a better track than that to be found at Brightwood. Considering the fact that the track is only a half-mile affair and only fifty feet wide, the time made in each event was good. The following makes of cars were represented: Cadillac, Rambler, St. Louis, Winton, Orient, Standard and Stanley.

Dayton Has a Disappointment.

DAYTON, Oct. 28.—The Dayton Automobile Club had a chilly day for its races at the Fairgrounds last Saturday afternoon. The attendance was small, and the various events proved to be somewhat of a disappointment.

Race No. 8 was a starting and stopping contest. Six cars were entered and each car was loaded with four passengers, who boarded their respective cars after the starting signal had been given. Reaching the starting point after having once circled the track, the passengers of each car jumped to the ground, and then quickly remounted, the machines starting on their second half-mile. The whole performance was carried out with lightning-like rapidity and was quite interesting. The race was won by Kneisley Jewell.

The last event of the day which was to have been a match race between Earl Kiser and Carl Fisher had to be called off owing to the failure of the Mohawk racers to arrive in time for the event.

Notes on the Sport.

F. A. La Roche of the American Darracq Automobile Company, has won this season sixteen cups in automobile races. The cups will all be displayed at the coming automobile show.

"Things are different" with Barney Oldfield now. Less than a year ago, by his admission, he was unable to attend the automobile shows because of a lack of funds. Yet he had been riding an automobile for some time and had gained a mile record which startled the world. To-day Oldfield has his fortune well started and he will attend the shows and be seen with his Winton cars. Barney and the Bullets No. 2 and Baby, will undoubtedly be among the leading attractions of the show.

George A. Wheelock of Chicago, president of the Metropolitan Turf Association, will sail for Europe about December 15, accompanied by his wife and chauffeur, Ray Macdonald.

Albert Champion's accident but bears out the assertion of F. A. La Roche, that the driver of the automobile should be trained for his work before being allowed to enter a contest. Champion is king of the motorcycle riders with a record of :55 on a five lap track to his credit, but there are yet many things for the great Champion to learn.

Mr. Mabley of Smith & Mabley, had his guests at Glenwood, on Thursday of this week, a party of Metropolitan newspaper men to test his 21-horsepower automobile speed launch, the *Vingt-et-un*.

An effort is being made at present to work up interest in a Southern and Western automobile racing circuit to start at once, and Glenn Stuart of Kalamazoo, former manager of Barney Oldfield and Tom Cooper, is at work on the project. A majority of the drivers are so busy at present getting ready for the shows that they will not take part in the proposed circuit. Mr. Stuart feels confident of success, however, and has secured Jack Levin to drive one of the cars.

SUBSCRIPTIONS FOR A CHALLENGE CUP FOR POWER BOATS.

The American Power Boat Association, at its semi-annual meeting, at the Hotel Navarre, on Wednesday of last week, appointed a committee to obtain by subscription a challenge cup, to be open to challenge from any recognized yacht and power boat club. The committee is composed of Anson B. Cole, Edward McLellan, J. H. Wainwright, E. W. Graef and Henry J. Gielow. The trophy is to be of $500 value.

Several amendments to the racing rules were discussed. The most important ones adopted related to endurance performances of the various power boats in future races. Fifty points are to be given for the perfect performance of a motor, which must run from start to finish without adjustment or manipulation. Penalties are to be imposed for any stop made in the race, which is to be so arranged that at least two hours shall be required to complete the contest for boats rating twenty-six feet and under, and at least three hours for boats rating over twenty-six feet. Monday, May 30, was the date chosen for the opening race of the association in 1904.

George Cannon will take his steam machine to Florida for the meet at Daytona and Ormonde Beach. Joseph Tracy will accompany Mr. Cannon.

IMPROVEMENT IN MANUFACTURE OF WIRE FOR HIGH TENSION CURRENTS.

Ordinary rubber-covered high-tension wire, such as is used for electric light and power circuits, is in some respects very unsatisfactory for use between the spark coil and plug of an automobile. When new, its insulation is all that could be desired, and it is not affected by water, but under the influence of the oil, grease, and heat to which it is exposed near the motor, the rubber compounds in its covering quickly deteriorate. When such a wire has been in place a month or two, its insulation is an unknown quantity.

Recognizing the need of a special kind of wire for this service, the Packard Electric Company, of Warren, O., has brought out two styles of cable, one for primary wiring and one for secondary, in which no rubber is used. Except in the thickness of the insulating covering, the two styles are similar.

The core of this cable is made up of forty strands of No. 30 tinned copper wire, giving ample flexibility and at the same time a carrying capacity equal to a No. 14 wire. About these forty strands of wire are woven two layers of cotton thread. After each weaving the cable is passed through a bath of insulating liquid and baked in a steam-heated oven. Then come several layers of a specially-prepared tape, three layers for the primary current cable and five layers for that designed to carry the spark current. These tapes are strips of cotton cloth of varying widths, the inner layers being narrower, and they are wound in opposite directions to insure the integrity of the insulation. Each strip, before being wound on the cable, is given two baths in the insulating liquid, and two bakings, and a further bath and baking after being wound. Finally two layers of cotton braid, similar to those next to the core, are woven about the cable, and each goes through the same process of bath and baking as its predecessors. Thus every pore is filled and rendered moisture-proof.

The composition of the insulating liquid is of course the especial feature of this cable. It is not stated, but a sample piece of cable sent for examination shows it to be transparent, resembling ordinary varnish in color but of a quite different odor. It is very elastic, so that a bit of tape stripped from the sample, and creased so tightly as to disturb visibly the fibers of the fabric, showed fairly visible cracks in its coating when examined through a magnifier. When freshly stripped, the tape is moist and sticky, and the test just noted was made when it had been dried by a week's exposure. It therefore seems fair to suppose that the resistance of the tape is in no way impaired by the process of winding. Other tape of the same general character has been found to stand as high pressure as 8,000 or 10,000 volts for a single thickness of tape. The makers state that the primary cable, called by them their No. 3, requires from 18,000 to 20,000 volts to break down its insulation, and that their maximum testing capacity of 30,000 volts has been insufficient to break down the insulation on the No. 6 or secondary cable. They state that this was the wire used in "Old Pacific" of transcontinental fame, and that when the secondary cable was cleaned of its accumulated oil and dirt at the end of the run the outside braid was found to be as bright and sound as when new, and wholly unaffected by the oil.

Thomas Car Takes Prize in Keokuk.

The accompanying engraving shows J. E. Baker's Thomas touring car decorated for the recent floral parade in Keokuk, Ia., Mr. Baker's home city. Fifteen hundred yellow chrysanthemums, natural flowers, were used, while three large yellow and

PRIZE WINNER IN FLORAL PARADE.

black butterflies were arranged to appear as if drawing the car. Needless to say, with its attractive passengers in the tonneau, this car won first prize by unanimous vote. Mr. Baker, with his wife, went to Buffalo to receive his car, and after two days' instruction started home with it. He reached Indianapolis in 36 hours actual driving time, but on account of continuous and heavy rains shipped his car from that city. The trip to Indianapolis, Mr. Baker states, was a most enjoyable one and made without mishap or trouble of any sort.

Draw Lots for Space at French Show.

The drawing for the large show spaces, containing eighty square meters each, at the coming Paris automobile show, was held at the Automobile Club de France within the last fortnight, and eighty-eight exhibitors will be represented in these large spaces. The name of Gillet-Forest was the first to come out of the hat.

J. B. Chapman proposes to install an automobile stage line between Lawton, Okla., and Fort Sill.

PHILADELPHIA POST OFFICE TO EMPLOY AUTOMOBILES EXCLUSIVELY.

Assistant Postmaster General W. S. Shallenberger has awarded to the Electric Vehicle Equipment Company of Philadelphia a contract for automobiles to be substituted for the horse-drawn mail wagons that carry mail between the general post office, the Bourse branch office and the railroad stations. The substitution of the automobiles for the mail wagons took place on last Saturday night, and the first motor car to carry the mails was operated by George W. B. Hicks, superintendent of the company.

"We have been working for this change for some time," said Assistant Postmaster Knowles of the Philadelphia Post Office. "It is our plan to eventually substitute motor cars for all horse-drawn vehicles used in connection with the mail service in Philadelphia.

Pittsburg Suburbanites to Desert Trolley.

A charter has been granted to the Auto Traffic Company of Pittsburg, Pa., and the city is to have an automobile livery and passenger service. Regular runs into the outlying districts of Pittsburg and Allegheny will be established, to start from designated points at certain times. A feature will be the service for carrying suburban residents to and from business. The fare for the automobile service will be slightly more than that charged by the electric cars, but the service will be better, since regular patrons will fill the coaches in the residence district in the mornings and the run to the business district will be made without stops, and in much faster time. Sightseeing and pleasure trips will be arranged through the parks and along the boulevards, and trips into the surrounding country over the good roads will be arranged at certain intervals. Later the company proposes to enter the light express business in Pittsburg and surrounding districts.

Arrangement for Detroit Show.

The Tri-State Automobile and Sporting Goods Association, Detroit, Mich., announces that the dates set for its third annual show are February 15th to 20th, inclusive, and the exhibits, will, as heretofore, be conducted in the Detroit Light Guard Armory. The liberal policy which has made former shows held by the association so successful will be maintained, but on an even more comprehensive scale. These recurring shows are now well established, and Detroiters and residents of surrounding towns and cities have come to look forward to them, with the expectation of finding most new models among the exhibits. Particulars regarding space may be obtained from Seneca G. Lewis, Detroit, secretary and treasurer of the association.

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COSTLY RELIABILITY.

To say that reliability may come at too high a price may sound paradoxical, but like many other paradoxes it contains more than a grain of truth, which may be found by a study of touring car construction.

Because they are built for a class which must study its pocketbook, most American gasoline runabouts are built of rather low-grade materials, and with slow-running and therefore rather heavy, but durable engines. They are made heavy enough to carry the engines and offset the quality of materials, but they are still fairly light, and the purchasers are satisfied. In a fast touring car on the other hand, nothing but high-grade material can be thought of, because with cheap materials the weight of the car is increased out of all reason. But—and here is the point—even if the best materials are used throughout, the reliability due to a moderate engine speed may be too dearly bought, because of the excessive cost of tires under a heavy and fast machine. Every pound of weight added to the engine, by reducing its speed and increasing its size at a given power, calls, roughly speaking, for another pound of metal in the transmission gear; and the two pounds thus added require another two in the running gear to carry them.

To take a concrete case, let us suppose a motor with four 4 by 5 inch cylinders. If the work of a reasonably good designer it will weigh not to exceed 350 pounds, and at 1,000 r.p.m. will brake 20 hp. It will probably have automatic inlet valves, as these adapt themselves to varying speeds better than cam-lifted, and therefore, positively timed valves. With a 3 or 4-speed sliding gear transmission, it will drive a five-passenger tonneau car weighing, without passengers, 2,000 pounds, at speeds up to thirty-five or forty miles.

Now, such a motor is by no means an extreme case, as its speed under load might readily be increased a quarter. But it will wear out faster, break its inlet valves and need new bushings and reboring more frequently, than a motor runabout at, say, two-thirds the speed and having cam-lifted inlet valves. Suppose that for these reasons we substitute a 5 by 6-inch engine running 650 r.p.m. under the same conditions. This motor will develop 25 hp. at that speed, and will weigh 525 to 550 pounds, with the same class of material and workmanship as the other. The weight of the car will be increased from 2,000 to 2,700 or 2,800 pounds, and the extra power will be needed to drive it at the same speed. The maintenance of the engine will be much less, but its first cost, and the first cost and maintenance of every other part of the machinery, will be increased. More than all, the tire bill, which probably averages as much as all the other items of expense put together, will be increased away out of proportion to the added weight, on account of the high cost of large tires for heavy machines.

Is it not in the end far cheaper to spend money on the motor and save the tires? Every motorist who courts the costly joys of high speed will probably readily admit that it is, as speed on the highway is especially destructive to rubber. But the public in general will hardly permit manufacturers to exact the cash price of a more expensive motor so long as they may choose instead—the hope of avoiding the deferred, though larger, expense of tire repairs and replacements.

THE Y. M. C. A. MOTORING COURSE.

The first thought of most readers at the announcement from Boston last week, regarding the projected Y. M. C. A. automobile course which is to open this month, was probably that if the lucky students get (and absorb) all the information promised in the very comprehensive prospectus, they will have gained their knowledge at a phenomenally low price. Where else in the world can one acquire the whole alphabet of motoring in sixteen lectures, learn to make working drawings of machines, and familiarize himself with operation, the repairman's art, and "the use and abuse of every part of the machinery," all for forty-two dollars,—and have the *corpus vile* for each day's surgery supplied gratis by applauding manufacturers." The beneficiaries of the Boston Y. M. C. A.'s noble project are lucky dogs, or will be if they remember what they learn. On the whole, they probably will remember, since no other branch of research—unless it be the mixing of unknown chemicals in the laboratory—yields results so likely to stick in the memory as the personally conducted dissection of a piece of mechanism. And the zeal of the amateur chauffeur in disemboweling some one else's machine is comparable only to that of the small boy with his first dollar watch.

The unthinking public might jump overhastily to the inference that the benevolent object of the Boston Y. M. C. A. is merely to discourage profanity in the growing class of motorists; but on further examination the scheme is seen to be somewhat less one-sided than it looks. The chief bane of the manufacturer's life is his customers' ignorance of mechanical principles, and hitherto no one has undertaken to dispel this in a thorough and systematic manner. The manufacturer must needs give a modicum of instruction, and under an organized system like that proposed a given outlay can be made to yield much more substantial results. In fact, even additional outlays may be justified by the economy in needless repairs and mental wear and tear sure to result from them. The "course" deserves to succeed, and the personnel of the instruction staff seems to ensure that it will.

We have so long been accustomed to thinking and saying and hearing that rubber tires benefit the roads and never, never hurt them, that it comes with a bit of a shock to find *The Car* quoting the County Surveyor of Surrey, England, to exactly the contrary effect. "The large rubber tires," this official is reported to have said, "separates the small metal from the large and extracts it, so that it is a common occurrence after a dry day to find long lengths of road where the surface had been perfect in the morning covered with a fine, sharp grit, which had been sucked up during the day by india-rubber tires." The Chairman of the same Council says that heavy machines going at a rapid rate, tear gravel roads all to pieces, and recommends making experiments with a view to discovering a better wearing surface.

That pneumatic tires pick up loose dust and scatter it to the winds has long been known, also that a fast car on macadam or gravel is followed, as a comet by its tail, by a shower of detritus and pebbles. But that the suction of the tires is sufficient to loosen stone previously firm has not been generally suspected.

As it is almost impossible for the motorist working about his machine to avoid getting his hands scratched or cut now and then, it may not be amiss to call

attention to the danger of getting tetanus germs into wounds of this sort. These germs are most apt to be found in street or barnyard dirt, and when such dirt gets into a fresh cut the only thoroughly safe thing to do is to wash the cut out at once with an antiseptic solution and cover it with iodoform gauze, either wrapped around the member or held in place with adhesive plaster. Of course, not all soil has tetanus germs, but even when those are absent other germs are sure to be present, and if a cut is neglected a more or less serious case of blood poisoning may result. Therefore gloves should be worn where possible, and when that protection cannot be had a bottle of carbolic solution and a small roll of gauze, together with a vial of "New-Skin" for scratches, will make the above precautions as simple as they are salutary.

TWO HUNDRED EXHIBITORS ESTIMATED FOR NEW YORK SHOW.

Allotment of show spaces for the Madison Square Garden show to be held in January was made early this week, but the officials refused to make the result public, pending final verification and approval by Frank C. Sanger, manager of the Garden. It was stated by Secretary Young, of the Madison Square Garden Company, and S. A. Miles, manager of the National Association of Automobile Manufacturers, that the applications for space exceeded the available number of spaces by twenty-four, notwithstanding the second gallery has been added to the floor space used last winter and that the size of the spaces has been reduced 25 per cent. Applications have not yet ceased coming in, and two reached Secretary Young's office in the Thursday morning's mail. No doubt some of those whose applications had to be rejected will succeed in securing portions of spaces from more fortunate exhibitors, it was said.

The number of exhibitors this year, it is estimated on the basis of the allotment, will reach about 200.

Owing to the large number of applications from makers of complete vehicles, it has been found necessary to allot some spaces for the display of automobiles in the basement and in the first gallery, although it was originally intended to reserve the basement for motors and machinery. Some of the heavier cars will be shown there, and some of the light vehicles on the first balcony, the second balcony being reserved for sundries. The main floor and restaurant will be devoted to complete automobiles.

Sneak thieves have discovered a new field in taking lamps and horns from automobiles left standing unwatched in the street. If unable to dispose of the stolen accessories as merchandise, the thief pounds them up into a shapeless mass and sells them as old brass.

CONSERVATIVE BOSTON CLUB TO ENLARGE ITS GARAGE PREMISES.

BOSTON, Mass., Nov. 2.—The building committee of the Massachusetts Automobile Club, which has had under consideration for a number of months the question of larger quarters for the club, has practically completed the plans for an extension to the present clubhouse on Boylston Street. The clubhouse has a frontage on the street of about thirty-five feet and a depth of nearly a hundred feet. It was occupied first less than two years ago, but the steady increase in the popularity of the automobile, the growing membership, and the change in the style of car to the long-based tourer, early taxed the facilities of the club, and for some time it has been impossible to store all the cars of the members. The club, as soon as it appeared that extension was inevitable, secured an option on a lot of land with an eighty foot frontage on Boylston street, and adjoining the lot now occupied by the clubhouse, and this option has been taken up. Parties have been secured who will erect the extension for the club, which will occupy it under lease.

The addition to the clubhouse is to be three stories in height and will be constructed of stone and terra cotta brick, the materials used in the present clubhouse. The walls will be very thick and the floor will be of steel and concrete. The addition is to be devoted almost wholly to garage uses and, with the old building, will accommodate about two hundred cars of large type. The present building when crowded will hold seventy cars. A feature of the basement of the addition will be a separate repair shop for the use of chauffeurs. On the main floor will be a ladies' waiting-room of large size, an office for the superintendent and a room for the general use of the chauffeurs. The committee which has charge of the erection of the addition consists of Elliott C. Lee, Otto B. Cole, Stephen W. Sleeper and Newton Crane.

With the completion of this new building the Massachusetts Club will have as fine a house and garage as any club in the country. The organization is in a very prosperous condition, its membership increasing steadily from the class of men most interested in automobiling from an amateur standpoint. In policy the club has been conservative and is likely to remain so for some time to come.

HEADQUARTERS IN POPULAR HOSTELRY FOR CLEVELAND CLUB.

CLEVELAND, Nov. 2.—At a meeting of the trustees of the Cleveland Automobile Club, held last Wednesday evening, it was decided to rent a suite of rooms in the Hollenden hotel to be fitted up for the benefit of the club. During the three years of its existence the club has been meeting at various places and has no permanent headquarters. The few active members have appreciated that it was impossible under such conditions to increase the membership of the club to the figure that the automobile population of Cleveland seemed to warrant, and recently several members offered to guarantee the rent of a clubhouse if the organization would take up the matter in an energetic manner. But after canvassing the situation, it was deemed advisable to make the start on a somewhat modified plan. The plan of a clubrooms in the Hollenden, which is the most prominent hotel in the city, possesses a number of attractions. The location is central and the surroundings are, of course, the best. The rooms will be fitted up to suit the requirements of the club, and refreshments and luncheons will be available at all times. The rooms will be maintained by the hotel and special attendants will be constantly on hand. Of primary importance is the fact that the cost to the club will be considerably less than maintaining its own clubhouse. A formal opening of the new rooms will be held in the near future.

Club Formed at Sacramento.

Enthusiastic automobilists of Sacramento, Cal., gathered in one of the parlors of the Capital Hotel, in that city, on the evening of October 15 and completed the organization of the Sacramento Automobile Club.

The new club will hold close, friendly relations with the California Automobile Club of San Francisco, and will co-operate with that body wherever possible.

CALIFORNIA CLUB PURGES DIRECTORATE OF TRADE MEMBERS.

SAN FRANCISCO, Oct. 29.—The annual meeting of the Automobile Club of California was held on Wednesday night, October 21, in the offices of the president, F. A. Hyde. The election of officers to serve during the coming year was the principal business before the meeting. The regular ticket, as presented by the nominating committee, was elected unanimously. The directors for the next twelve months are John D. Spreckels, R. P. Schwerin, L. P. Lowe, C. C. Moore, S. G. Buckbee, F. W. McNear and F. A. Hyde. Of this number only two—F. A. Hyde and John D. Spreckels—were on the board already, and John D. Spreckels has been a member of the board only since the second week of August. The retiring directors are A. E. Brooke-Ridley, E. P. Brinegar, E. Courtney Ford, Dr. D. A. Stapler and Byron Jackson. All of these except Dr. D. A. Stapler, who is a physician and an expert amateur automobilist, are connected with the automobile trade. A. E. Brooke-Ridley is an electrician and an agent for electric machines; E. P. Brinegar (formerly secretary of the club) is the manager of the Pioneer Automobile

Company and agent for the Winton, Oldsmobile, Locomobile, and other machines; E. Courtney Ford is a salesman for the National Automobile Company, and Byron Jackson is proprietor of the machine works of that name.

The automobile trade is almost wholly excluded from the present board, J. D. Spreckels being the proprietor of the San Francisco *Call* and a millionaire; R. P. Schwerin being general manager of the Pacific Mail Steamship Company; and F. W. McNear, a son of George W. McNear, the commission merchant and grain dealer. S. G. Bucklee is secretary of the California Fireworks Company and F. A. Hyde is a lawyer and land speculator of considerable wealth. At the first meeting of the directors a president, secretary and treasurer will be chosen.

There was considerable talk about the approaching races to be held under the management of the Automobile Club of California on the Ingleside track on Friday and Saturday, November 6 and 7. Much work is being done to put the track into good condition and it is expected to be hard and smooth. In order to excite public interest in the meet, it was decided to hold an illuminated parade of decorated automobiles on Market Street on Thursday night, November 5. Invitations to take part in the parade will be sent to all owners of automobiles whose names and addresses can be ascertained by the committee in charge of the races.

The Automobile Club of California now has 125 members and is growing rapidly.

If any profit is realized by the November races on the Ingleside track, it is proposed to expend the money in improving the condition of one of the roads leading out of San Francisco, so as to render travel out of the city safer and more agreeable for the traveller, whether he be an automobilist, cyclist, rider or driver of horses or a pedestrian.

Western Clubs Join A. A. A.

The Automobile Club of Southern California, of Los Angeles; the Washington Automobile Dealers Association, Washington, D. C., and the Columbus Automobile Club, Columbus, O., have all joined the A. A. A., and the association was advised by wire on Wednesday that the Automobile Club of California, of San Francisco, would also affiliate with the national body.

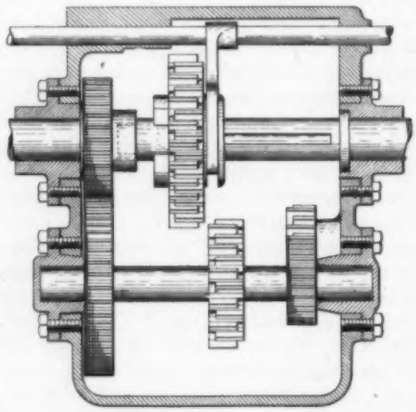
The Colorado Automobile Club, Denver, Colo., at its meeting held on the evening of October 13, decided to establish a home for itself before winter sets in. No definite plan of procedure was laid out, the matter being left in charge of the chairman of the executive committee. The accounts of the last race meet, held in Overland Park, show a gratifying profit, and since the club now has a surplus on hand it proposes to find a home.

Patents

Sliding Gears.

No. 742,812.—A. Winton, of Cleveland, Ohio.

In this invention the ends of alternate teeth on the meshing sides of the gears are



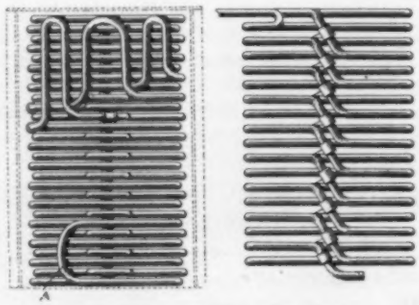
WINTON GEAR MECHANISM.

cut short, as the drawing shows. The purpose is to give clearance to the remaining teeth so that when the gears are shifted they will have time to pass into full mesh before actually making contact. This construction is claimed to be greatly superior to the practice of beveling the ends of the teeth, as the latter plan, when the gears are moving at different speeds, instead of facilitating engagement makes the gears tend to resist it by the rebound of the beveled surfaces. It is claimed that by reason of the ample clearance given by the construction shown neither difficulty in engaging the teeth nor rebound can occur.

Flash Boiler.

No. 741,094.—R. W. Barton, of Chicago.

A flash generator design susceptible of several modifications. The water is fed into the top coils and travels downward,



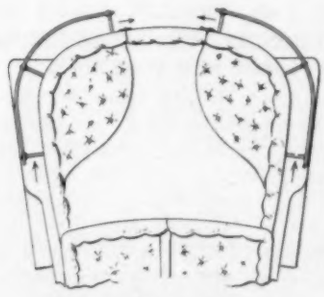
BARTON FLASH BOILER.

instead of the opposite as in early flash boilers. To prevent the water from running down bodily to the bottom, the end of each coil is connected to the beginning of the next through a trap, which in the left-hand cut takes the form of an upward bend of pipe. To avoid having the bottom coils, which are exposed to the fiercest flame, uncooled save by steam, a jump is made by a pipe *A* from a point where the water is nearly ready to vaporize, to the lowermost coil, from which the passage is upward through those intervening. In the right-hand cut the coils are bent in pairs, and the water enters the lower coil of a pair and passes out from the upper one to the lower coil of the next pair. This arrangement of itself forms an effective series of traps.

Tonneau Dust Guard.

No. 742,580.—W. H. Brown of Cleveland, O.

The drawing shows a plan view of a tonneau fitted with the dust guard.



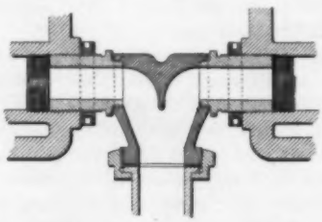
BROWN DUST GUARD.

The latter is in the shape of a bend windcatcher of sheet metal, which follows around the corner of the tonneau above the mud guard and is open at front and back. it catches the wind and discharges it behind, preventing the dust from coming over the back of the tonneau.

Exhaust Fitting for 2-Cycle Motors.

No. 742,409.—E. B. Gallaher of Philadelphia, Pa.

This fitting is designed especially for use in constricted spaces where there is not



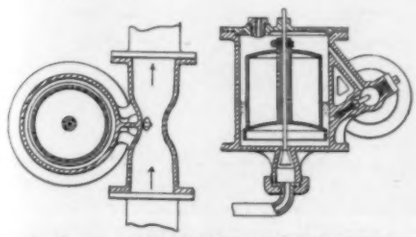
GALLAHER EXHAUST COUPLING.

room for the regular cast branches or yokes. As the drawing shows, the two branches of the tee are separate threaded nipples, which may be screwed into the valve chambers far enough to disconnect them from the main tee casting. They have lock-nuts, as shown, to keep them snug when in place.

Carbureter.

No. 741,962.—J. Gronvelle and H. Arquembourg of Paris, France.

In this carbureter the spraying orifice is in the small threaded nipple projecting into the horizontal air passage. The left-hand horizontal section shows the form of the passage plainly. The special feature



G. & A. AUTOMATIC CARBURETER.

of the carbureter is the passage connecting the air passage with the air space above the gasoline in the float chamber. Its object is to prevent too intense a suction of gasoline, and consequently, too rich a mixture at high motor speed. The reduction in pressure above the gasoline is regulated by the size of aperture in a small bushing in the cover, which bushing may, if needed, be exchanged for another with a different aperture to suit a different grade of gasoline.

MANUFACTURERS' ASSOCIATION TRANSACTS IMPORTANT BUSINESS.

Reports on the October endurance run, with recommendations for the 1904 run, were read and discussed at length at a full meeting of the Executive Committee of the National Association of Automobile Manufacturers held last Wednesday afternoon at the Association headquarters in New York. The reports of the officials could not be adopted in full, as they contained a number of recommendations which had to be acted on separately, and some of which were adopted while others were rejected. It will be some days before the report of the action of the committee will be made public. The report of Henry Souther upon the condition of the cars at the end of the run will not be made public at all, but copies will be given to all the manufacturers who participated in the contest. The report is very exhaustive and may be expected to afford much valuable information to the manufacturers.

At Wednesday's meeting A. B. Tucker, who acted as press agent on the endurance run, was elected to the office of secretary of the N. A. A. M. to succeed Harry Unwin, resigned.

Much interest was shown in the Association's plans for the American exhibition at the St. Louis Exposition, whose management has adopted most of the Association's recommendations regarding the automobile section. Thirty members of the N. A. A. M. have already signified their intention of making displays. Notification is soon to be issued to all manufacturers not heard from, that application must be made at once if space is desired.

NEW FORCE FEED OIL CIRCULATION SYSTEM IN 1904 WINTONS.

Following are the most important changes in 1904 model of Winton touring cars, according to an advance leaflet just issued by the Winton Motor Carriage Company of Cleveland:

The tonneau is four inches wider than the 1903 model; the door three inches wider. The door seat drops automatically into place when the door is closed and folds up automatically when the door is opened. Rear wheels have been increased from 32 inches to 34 inches diameter, tires from 4 inches to 4 1-2 inches. The rear carriage springs are eight inches longer than in the 1903 model, and also wider, and contain seven instead of six leaves.

One of the most radical improvements is in the lubrication. Heretofore all bearings were lubricated by a float-regulated gravity feed. The new car has an automatic force oil circulator, which automatically lubricates all bearings all the time the motor is in operation. Two quarts of special high speed oil is carried in the active circulating system and this oil is used over and over again until the lubricating properties become exhausted. After about 500 miles of service, a pet cock at the bottom of the reservoir beneath the crank case is opened and the oil allowed to drain out. The supply is replenished by opening a valve on a supply tank under the bonnet, this supply tank having a capacity for 2,000 miles of travel. It is claimed the system renders the motor and bearings proof against damage from carelessness and inattention. The transmission gear is run in oil and the cover has been made more securely tight, preventing all leakage. The lubrication of the chain has been improved. Heretofore the escape of oil through the air line valve under the driver's seat has been allowed to spray down upon the transmission gear case. Now it is carried by a short brass tube from the escape valve to a point just over the chain at the engine sprocket, by which means, when the motor is running, there is a constant application of oil spray upon the chain.

The new model will include as part of its regular equipment, a detachable canopy top with brass fastenings and finishings and hinged glass front, together with side-curtain attachments, making the car suitable for all kinds of weather, and in every sense a touring car.

Hussey Sues Cadillac Company.

Patrick L. Hussey, formerly manager of the Henry Ford Company, Detroit, Mich., (now the Cadillac Automobile Company), has brought suit against the company for $7,500 damages for alleged breach of contract. Hussey claims that the company agreed to employ him for five years at a salary of $200 a month, and that he was to receive, in addition to his salary, a half interest in any patentable devices he might invent and 500 shares of stock at the rate of 100 shares per year. It was also agreed in the contract that he was not to be dismissed without cause, and then only on sixty days' notice. Hussey states in his complaint that he started to work for the concern on August 1, 1902, and that on September 30, of the same year, he was dismissed without cause or notice. The company changed its name to the Cadillac Automobile Company two months later.

Crest Company Moves to New Factory.

The Crest Manufacturing Company, Cambridge, Mass., has removed from its former location at Broadway and Davis Street, Cambridge, to its new factory on First Street. The business was formerly carried on in four separate buildings, but in its new home the company is able to do all its work under one roof. The main building is 200 by 150 feet in dimensions, and has 40,000 square feet of floor space. New machinery has been installed and the plant now has a capacity for turning out 1,000 motor cars per year. The new factory is particularly well adapted to the manufacture of automobiles, having forge and machine rooms, painting and testing departments on the ground floor. The light machine work is done on the second floor, where the bodies are also built; the offices also are located on this floor. The new 1904 Crestmobile runabout, with tonneau attachment, is now ready, and T. B. Van Alstyne, sales manager for the company, is making a tour of the West appointing agents. The Crest company has recently increased its capital stock to $100,000, and the following officers have been elected: President, Henry W. Lamb; vice-president, I. H. Davis; secretary-treasurer, W. O. Adams. A branch salesroom has been opened at 182 Columbus Avenue, Boston, and a branch will be opened in New York on West 38th Street within the next few weeks.

PLOT ALLEGED BY THE CHICAGO MOTOR VEHICLE COMPANY.

Attorneys Albert and Edward Eastman, for the Chicago Motor Vehicle Company, filed an answer in the Federal Court on October 30 denying that the company is insolvent and demanding a trial by jury to test its financial condition. They make serious charges against the petitioning creditors and their attorneys, Newman, Northrup, Levinson & Becker. The lawyers are said to have conspired with the creditors to wreck the business of the corporation. The company's secretary, A. W. Augur, declares that the assets of the concern are worth $700,000 and the liabilities are not more than $215,000. Attorney S. O. Levinson, one of the accused firm, denied the allegation of a conspiracy. He stated that the petition was filed in accordance with the bankruptcy act and that the concern is insolvent.

News Notes and Trade Items.

After January 1, 1904, it is announced, the price of the White steam touring car will be increased to $2,500.

The Field Motor Carriage Company, Auburn, N. Y., capital $100,000, has been incorporated by A. H. Nelson and A. P. Norton.

The American Chocolate Machinery Co., New York, which makes the Walter car, is the latest concern known to be building a racing car.

A special brand of cylinder oil is being made especially for motor cars by the Underhay Oil Company, 275 Franklin Street, Boston, Mass.

Oakes & Morse, 40 Sudbury Street, Boston, Mass., have made alterations and enlarged their plant to accommodate increased business in "Comet" spark plugs.

The Charles Wing Company, Amesbury, Mass., an old established jobber of material and trimmings for carriages, has added automobile supplies to its line.

Charles W. Mears of Cleveland, has become associated with Charles B. Shanks in the advertising department of the Winton Motor Carriage Company.

The Rhode Island Electromobile Company has been incorporated in Augusta, Me., with $200,000 capital. I. L. Fairbanks and J. Berry are the incorporators.

The Haynes-Apperson Company, Kokomo, Ind., is just completing a large addition to its blacksmith shop. A large power hammer will be installed, and the force of this department will be increased.

The Boston Automobile Dealers' Association has secured Symphony Hall from March 14 to 19 inclusive for its second automobile show. This makes the Boston show come three weeks after the Chicago show.

The Ajax Motor Vehicle Company, 220 West 36th Street, New York, has assigned to Charles G. Cornell. The company was incorporated in July, 1901, with $10,000 capital and Alfred L. Simpson as president.

The Western Automobile Company was incorporated in St. Louis, Mo., on October 23, with $10,000 capital, to deal in automobiles. The incorporators are Marion L. J. Lambert, Samuel Brendan and Samuel B. McPheeters.

Denial emphatic has been entered by G. W. Bennett of Thomas B. Jeffery & Co. relating to the statement recently made that he visited New York to make arrangements for establishing a branch house in New York for the sale of the Ramblers in the East. Mr. Bennett states he had no such intention and that the agency remains with Wanamaker's.

Frank W. Stockbridge, Paterson, N. J., who has conducted a large garage at Broadway and East 18th Street in that city, has made an assignment. The liabilities are said to be about $12,000, and the assignor puts his assets at $9,000.

The Kirk-Hall Company, Toledo, O., is erecting a new automobile storage and repair station. The building is of brick, 52 by 120 feet in dimensions, and will be three stories high. The equipment will be thoroughly up-to-date.

The Covert Motor Vehicle Company, Rochester, N. Y., has been incorporated with $100,000 capital. The directors are W. D. Duffy, W. C. Barry and W. C. Barry, Jr., of Rochester; B. V. Covert of Lockport, and G. C. Gordon of Brockport.

F. A. La Roche, Robert R. Debacker, Henry Mahl, Charles D. Cook, and Charles L. Auger, of the American Darracq Automobile Company, will sail for France some time in the latter part of the present month. Paris, Constadt and London will be visited, and three racing cars, already ordered, will be shipped before the party returns.

We desire to correct the statement made in these columns last week to the effect that: "Fred Illesly has succeeded Banker Brothers as the Chicago agent for the Peerless cars." The Peerless Motor Car Company is authority for the statement that A. C. Banker is the agent succeeded, and Frank P. Illsley the successor.

R. B. Chase, Mr. and Mrs. H. E. Howard and Mrs. S. E. York, all of Minneapolis, have started on an automobile tour from that city to Portland, Me., and from that point will drive through the South to St. Louis, where they will remain for the exposition. The party will not return to Minneapolis until next autumn and while on the road will wear the name of their home city on caps and sweaters.

Toledo cars will be handled in New York by the Pope Manufacturing Company, with offices at 12 Warren Street and a salesroom at 1711 Broadway. Elliott Mason is the New York manager for the Pope Manufacturing Company. The Toledo was the most successful of the cars finishing the Endurance Run, the two-cylinder car having against it but a total of thirteen points.

F. L. Thomas, operator of Fredonia No. 20 in the recent Endurance Run, claims credit for the longest run without sleep made by any contestant in the event. He states that he drove his car from Smithboro Bridge, 270 1-2 miles from New York, for four nights and days until he reached Pittsburg, a distance of 526 1-2 miles, without sleep or rest.

The only St. Louis car in the recent New York-Pittsburg endurance run finished well up in the van, though it was a regular stock car, entirely new before the start, and finished only twenty-five minutes behind the leader in Pittsburg, after suffering a long delay to replace a broken sprocket shaft.

Up to this time European automobilists have had to supply their own attaching fixtures when purchasing Veeder odometers D. J. Post of the Veeder Manufacturing Company, is now in Europe arranging with the foreign manufacturers in each of the principal countries to make the special fixtures required for European-built cars.

His itinerary includes all of the larger cities of Europe, and in addition to greatly extending the sale of Veeder odometers abroad, he will purchase new goods and automobile novelties for the Post & Lester Company, of which he is president.

The Moyea Automobile Company, New York, has taken the agency for a Swiss car named the Martini. A 14-horsepower Martini touring car recently made the ascent of Rochers de Naye, in Switzerland, to a height of 6,000 feet above the sea level. The ascent was made over the roadbed of a mountain cogwheel railway, the grade of which averaged 23 per cent. A gasoline tank was fitted upon the dashboard in order to insure a flow of gasoline to the carbureter on grades so steep that the motor would be higher than the ordinary fuel reservoir.

H. F. Borbein & Co., St. Louis, Mo., have bought out the Brecht Automobile Company of that city, and will continue to manufacture all the different running gears, bodies and separate parts of automobiles that were made by the Brecht Company. About two years and a half ago the firm of H. F. Borbein & Co. sold out to the Brecht Automobile Company, H. F. Borbein going with the Brecht company as manager and superintendent. Mr. Borbein has served in that capacity ever since, and now is manager of the business under the new name.

Progress in the manufacture of automobile tires has been amply demonstrated by the general tire experiences in the recent Endurance Run, and by the different transcontinental trips during the season now drawing to a close. The Diamond tires used in the Endurance Run, the manufacturer states, were its 1904 construction, and five of the cars equipped with these tires made the entire run without sustaining so much as a puncture. On seven and one-half sets of these tires, it is further claimed, the aggregate troubles amounted to repairing five punctures and replacing two casings. There were fifteen and one-half sets of Diamond tires that started, and of these twelve and one-half sets finished the run.